

THE MEDICAL AND SURGICAL REPORTER.

No. 1957.

SEPTEMBER 1, 1894.

VOL. LXXI—No. 9

ORIGINAL ARTICLES.

POLARITY IN RELATION TO CATALYSIS AND VITAL ACTION.

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In an article in the *REPORTER* of July 7th, 1894, I have endeavored to present a theory as to the physiological functions of coloring matters and ferments. In that article the attempt was made to show that these substances are concerned to an eminent degree in the transformations of matter and transmutations of force effected by organic forms. The theory that their action hinges upon a capacity for polarization, while not receiving definite statement was distinctly implied. To further develop the idea of polarity in relation so catalysis and vital action is the object of the present contribution. My apology for offering it is my strong conviction that it will prove a key to some of the problems which confront the investigator in the region of chemico-physiologic research; questions of great interest to every wide-awake and progressive physician.

The terms *magnetized*, *polarized*, *nascent* when used with reference to atomic or molecular states, express the same condition. It is a condition of *heightened* activity, of *accentuation* of existing affinities. It represents a definite expenditure of force and is capable of evolving a definite amount of force. This state established, determining conditions decide what the resultant action shall be. If the proper conditions be present, the force propagates itself as electric currents. If answering chemical bonds are within reach of the

excited affinities, chemical union results. Should the conditions for conduction or chemical action be wanting, static electrical conditions are established.

Let the condition be induced in a substance susceptible of a distinct bipolar excitation, as the magnetic metal iron, and a magnet is formed. If the iron has been previously hardened into steel and its molecules thus rendered less movable, the magnet, formed with greater difficulty by a greater expenditure of force, will be permanent. A permanent magnet is an aggregation of molecular magnets having a fixed axial relation to each other. It is itself a static condition of force, arrested motion, yet it embodies a capacity to take up mechanical motion and convert it into other modes of force. This capacity has been turned to immense practical account in the magneto-electric machines of late years. The capacity to transmute mechanical motion into electro-chemical force is possessed by each molecule of a magnetic substance in a condition of excitation. The aggregation of molecules simply aggregates the force.

The forces electricity and magnetism are directly and distinctly correlated. They have the same basis in a condition of molecular polarization. They are inseparably associated though acting in lines perpendicular to each other. To excite a molecule electrically is to excite it mag-

netically in a direction transverse to the line of electrical excitation. To magnetize a molecule in a given direction is to electrize it in a transverse direction.

Catalytic agents are said to act by their *mere presence*. This, of course, to a logical mind, is a luminous absurdity. Mere presence is a very negative property, yet these agents effect very positive results. They effect definite transformations of matter and transmutations of force. How do they act? By virtue of a capacity for polarization, they appropriate force and expend it in producing chemical decompositions and recompositions. The force is represented in the *condition* of polarization, and is transmitted by inducing a corresponding condition in the atoms of substances upon which it is expended. It expresses itself in repulsions between atoms in analytic processes, and in attractions and unions between atoms in synthetic processes. The force appropriated may be mechanical motion, acting through its molecular expression, heat, or those modes of motion known as light and electricity, in processes which involve a *consumption* and *storage* of energy; or, on the other hand, it may be chemical affinity in processes which involve a liberation of force as heat or motion. The principle of the conservation of energy is in no sense contradicted, since it is affirmed in no case that force originates *ad initio* but is always *derived* and always *transmitted*.

It is not intended, however, to set forth the contention that *all* the force concerned in every chemical action brought about through the polarizing action of a catalytic agent, is derived through that agent. This is probably true of all those actions which involve a *storage* of force. In the separation by chlorophyl of the atoms of O and C in the compound CO₂, and of O and H in H₂O where fully satisfied affinities are divorced, this is unquestionably true. In this case *all* the force that could be developed by the recombination of these atoms has been derived through chlorophyl from the sunlight.

In *force-evolving* actions brought about by catalysis, the force set free may be vastly in excess of that employed in producing the polarization, the excitement of affinities which initiates the actions. The polarization itself, however, represents a definite expenditure of force which reaps-

pears in the resultant action. Nevertheless, in every polarized atom there is besides the accentuation of affinity, a residuum of force-evolving capacity inherent in its nature, pertaining to its atomic *weight*. Even this may be regarded as an *induced* condition by introducing a consideration speculative, to be sure, yet reasonable. "The periodic law" of Mendelejeff affirms that the properties of the elements are functions of their atomic weights. In the light of this law and the principle of the conservation of energy, may it not be that the generic differences of the elementary forms of matter as expressed in their atomic weights, represent the effects of the operation of forces which have differentiated them from a single primary form; and that the sensible expressions of force, the dynamic states of matter, are evolved from a tendency to fall to a common level, to approach a common condition of static equilibrium.

The chemical actions of organic life involve either a storage of energy or an evolution of energy. In the ascending series of actions, force is stored in compounds formed through the action of polarity in chlorophyl, and certain other chemical bodies, called ferments, concerned in constructive metabolism. In the descending series of actions this force is released through the action of a complementary set of bodies which introduce oxygen and tear down the compounds built up through the action of the former. No organism can be built up or torn down without the action of some of these agents.

In the article referred to in the beginning of this paper, I ventured to regard the coloring-matters, chlorophyl and haemoglobin, as well as the coloring of bile, as catalytic agents. It appears to me that they are *distinctively* catalytic agents, and on account of their relations to life, possess a peculiar importance. Through the operation of polarity in chlorophyl, materials are drawn from inorganic nature, out of which organic forms are built and forces are appropriated which are ultimately transmuted into vital action.

The *modus agendi* of chlorophyl presents itself to my mind as a distinct mechanical process, analogous to that of the magneto-electric dynamo. In this machine, rotary motion being communicated to magnets, there is developed in bodies having proper relation to them, a condi-

tion of polar excitement. The proper means of conduction being provided, this force is conveyed away as electric currents. Chlorophyl contains the metal iron which, placed near the middle of the electro-chemical series, possesses both acid and basic affinities and a peculiar capacity for bipolar accentuation, being hence distinctive magnetic.

The most refrangible rays of the sunlight, the violet and ultra-violet, the actinic rays, are employed in producing and maintaining a condition of magnetization and its correlate, electro-chemical excitation, in the iron of chlorophyl. The least refrangible rays, the red and ultra-red, the dynamic rays, are employed in conveying motion to the atoms or particles of magnetized iron. Thus are developed and maintained what are essentially rotating magnets. Through their action the vibratory motion of sunlight is absorbed, appropriated and converted into electro-chemical force, a dynamic force changed to a chemical action.

To bring our facts and theoretic conceptions concerning the action of haemoglobin into logical relationship, a different mental picture becomes necessary. Here chemical conditions and chemical actions are developed into dynamic expressions. In the lungs, the alkalinity of the blood is highest from the exhalation of carbonic acid, and the iron of haemoglobin is in the condition of electro-positive accentuation. In this condition it seizes with avidity upon oxygen, which is electro-negative. In the capillaries of the various organs and tissues of the body, the alkalinity of the blood is lowest from the absorption of carbonic acid.

Here the iron of haemoglobin becomes electro-negative and throws off its oxygen. This oxygen, liberated in the nascent condition, unites with oxidizable substances present and generates *heat and motion*.

The atoms of C and H liberated from CO_2 and H_2O through the action of chlorophyl, represent the force used in separating them from their compounds at its highest degree of *tension*. They embody the capacity of evolving the *whole* of the solar energy they represent. This may occur directly in the process of combustion as a high expression of dynamic action or more slowly in the oxidations of animal and vegetable life.

In the high-tension, violent, uncontrol-

led action of combustion, *direct* affinities operate, but in the low-tension, even, *regulated* oxidations expressed in vital action, the presence and activity of these substances, coloring matters and ferments, which I have ventured to consider as intermediary bodies, become necessary. Fatty matters, to be sure, represent a condition of partial oxidation with lowered tension, yet of all the hydro-carbonaceous material utilized by animals they approach most nearly the condition of pure hydrocarbons and possess the highest capacity of heat production. It may be also that their oxidation constitutes an exception to the above statement, since, reduced to a finely divided "molecular" condition, they may be *directly* oxidized, especially in the lungs where the oxygen supply is abundant. This may constitute a special provision for heat production at this point, since heat is rapidly lost here in producing the difference in temperature between inspired and expired air, and also absorbed by the expansion of gaseous bodies which pass out with the expired air.

The carbohydrates, starch and sugars, those substances which exhibit so beautifully the marvels of magni-crystalline action, also display most strikingly the operation of polar agencies in animal and vegetable processes. Starch, $\text{C}_6\text{H}_{10}\text{O}_5$, the first easily demonstrable product of the recompositions which follow upon the dynamolytic action of chlorophyl, may be regarded as the storage form of carbohydrate material. Under this form it is stored in the stems, cavities, seeds, tubers, etc., of vegetables, and in the liver of animals, for future use. In order to become available, it must be converted into the more soluble forms of dextrine and sugar. This transformation is effected by diastase and its congeners, the other diastatic ferments. To initiate these actions a certain degree of *heat* is necessary, which acts by inducing in the ferment a condition of accentuated affinity for water, the presence of which is also necessary that these actions may go on. The water is transferred to the material undergoing change and effects its hydration with evolution of heat. The heat may reach quite a high degree, as when large quantities of malting grain are contained in vats. In the germination of seed in a normal way, the heat evolved is no doubt in part applied to the constructive needs of the springing life.

The conversion of starch into sugar, while it confers a distinct gain in crystalline quality, solubility and diffusibility, involves a loss of heat and consequent lowering of tension. The lowering of tension is, however, for the purposes of life a distinct gain, since it confers a greater facility for being controlled or regulated in its heat evolving function. The control of the body temperature, the regulation of the heat producing, distributing and dissipating functions, so as to maintain a uniform normal, is one of the most remarkable powers of the animal organism.

The appropriation and transferrance of H_2O by diastase in accomplishing its function, presents us an analogy to the assumption and conveyance of O by haemoglobin. May not also the difference between the so-called *latent* and *active* conditions of diastase bear an analogy to the difference between reduced haemoglobin and oxyhaemoglobin?

The coloring matter of bile has imposed upon it a double work. It acts as a carrier both of water and of oxygen. During the period of digestion and absorption, while glucose is being deposited in the liver as glycogen, and peptones undergoing conversion into blood albumen, the bilirubin newly extracted from dead blood cells, appropriates water from the former and oxygen from the latter, to be yielded up in the oxidations and hydrations going on in the alimentary canal. During the intervals of digestion, the coloring of bile absorbed from the intestine in the condition of bilirubin, is converted in the portal vein into biliverdin, and upon re-entering the liver yields up its water to convert glycogen to glucose, and its oxygen to complete the oxidation of certain nitrogenous bodies into urea.

The difference between the two conditions of the coloring matter of bile is not strictly a molecule of water and an atom of oxygen, H_2O+O , but a molecule of peroxide of hydrogen, H_2O_2 . The same bond that links the H_2O and O to the coloring matter, links them to each other, and is broken at both points at the same instant. Bilirubin cannot appropriate water unless oxygen be present, nor can it appropriate oxygen save water be present. To hold the one it must have the other.

Although the processes we have been considering are expressions of cell activity,

cell life, it does not follow that any new force is originated by the cells themselves. Cells, like all aggregations of matter endowed with life, exercise *directive agency* over forces already existing. They select, combine, *direct* matter and forces drawn from the common stock in nature.

It may be objected that the agents of the destructive transformation, fermentation and putrefaction, which take place in dead organic material are organisms, and that the changes they effect are dependent upon their nutritive actions.

It will readily be admitted they are organisms, yet the fact remains that they are exceedingly simple in structure and the transformations they effect, while incidental to the nutrition and growth of the cells, are in themselves simple chemical reaction over which they exercise *directive agency*. They are able to disturb the balance of chemical attractions in the compounds which they tear down, only when supplied with a moderate degree of heat which acts no doubt by polarizing, that is, by increasing the chemical activity of their nitrogenous constituent.

It is a fact worthy of note that all the catalytic agents, so-called, concerned in organic actions contain the negative element nitrogen. May it be that this element, weak in its own attractions, unstable, fond of change, taking part in the most active phenomena of life as well as the most violent reactions of inorganic chemistry, facilitates the intra-molecular changes necessary to the discharge of their functions by serving as a centre or hinge about which the atoms may move and change their groupings without the molecule itself going to pieces?

Anesthetics in Labor.

Dr. M. M. Latta, in *North American Practitioner*, says: For many years I have given in all midwifery cases a mixture composed of chloroform, one pound; nit. of amyl, one drachm; mixed and well shaken it is ready for use. I found it especially useful in cases of weak heart as indicated by purple lips sighing respiration, and feeling of impending trouble. I generally precede its use by an opiate, in the manner and form that seems indicated.

THE MEDICINAL TREATMENT OF GRANULAR CONJUNCTIVITIS.*

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I have been asked by our chairman to read a paper on the medical treatment of granular conjunctivitis. This, however, is a very difficult task, especially in answer to the question, which is the best treatment of granulated lids.

Perhaps in no other eye disease have so many remedies or plans of treatment been designed as in the one under consideration. This fact alone would throw a critical light on the matter, according to the law, "the more numerous the remedies, the less curable a disease." But we get even a much more unpromising view if, looking over the galaxy of methods and procedures from the onset of historical ophthalmology up to our present times, we come to the conclusion that we have turned in a circle and are now with our end at the starting point of our medical ancestors of more than 2,000 years ago. For what else is it than the same principle when they used verdigris and we sublimate, or when Hippocrates scraped the conjunctiva in order to remove the granulations, practicing ophthalmoxysis, and we do the same thing but call it *brossage* or *grattage* of the lids? Nevertheless the subject is very important considering the devastation caused by trachoma, especially in the countries of its predilection. And a man who could entirely cure trachoma would do a greater service to humanity by that than by operating on cataracts.

The definition of granular conjunctivitis in the use of many not being very sharp, comprises collectively also much lighter forms of inflammation of the conjunctiva. Accordingly the reports of curing trachoma must be taken very cautiously. However, it cannot be denied that almost anybody who has had occasion to treat the disease, has met with good results by different kinds of treatment. If we consider the time not too short to form an opinion, it seems that a judicious revival of the old mechanical methods, combined with proper medicinal treatment, marks progress, especially in regard to the speediness of a cure. It is impossible to here

review all the substances which have been tried with more or less success, and it will suffice to mention only a few which have been lately devised and have come into more general use, or have deserved more interest.

In 1882, de Wecker reported very favorably the action of jequirity on trachoma. I witnessed the cases treated by Prof. Knapp in 1883 and 1884 (*Arch. of Ophth.* XIII., 1 and 2), while assistant at his clinic. Three per cent. infusions were repeatedly brushed over the everted lids, three times a day and oftener, and if these did not act, five per cent. infusions were used. The consequence was swelling of the lids, increased congestion, and muco-purulent discharge. In some cases, however, it amounted to a development of a severe diphtheritic conjunctivitis, followed by pyorrhœa and more or less destruction of the cornea. The conclusions were (*l. c.*): that jequirity cures trachoma more quickly, but less safely than other remedies. Its action is highly beneficial in most cases, but neither uniform nor always controllable. Knapp recommended a restriction to cases of old, intractable pannus with advanced cicatrization of the conjunctiva which cannot furnish nutritive material enough for either an infiltration into the depth of the conjunctiva or for an abundant purulent secretion. Some (Coppez, Murrell), still use the infusion. Cheatham (*Ophth. Rec.*, 91) powders it on the conjunctiva in cases of severe trachoma with pannus, making from three to six applications. He watches the patient very closely during the jequirity inflammation. C. Michel (*Arch. of Ophth.* XXI., No. 3) recommends it again, if used carefully.

At a meeting of the Heidelberg Ophthalmological Society, 1891, (*Bericht*, 1891,) von Hippel published his experience, gained on over 300 cases of trachoma, with the method of the Doctors Keinig of Soest, which consists in rubbing the conjunctiva with pledges of cotton dipped in sublimate solution, 1:2,000, after instillation of cocaine. (In the *Transactions of the Wisconsin State Medical Society*, of 1891,

* Read at the Wisconsin State Medical Society, May 2, 1894.

p. 117, I recommended it myself after some trials.) This rubbing has to be done gently when the conjunctiva is swollen and loose, in order not to cause ulceration. If the follicles are hard and the mucous membrane anemic, it has to be executed more forcibly so that the contents of the follicles may be expressed. The reaction is not very severe. Generally the conjunctiva swells and, the next day, shows a greyish coating which comes off easily. The follicles disappear gradually, without shrinking of the conjunctiva. There is a marked improvement of the corneal infiltrations and superficial ulcers which were produced by the trachomatous process, but not so, when associated with intense hyperemia and iritis. After the subsidence of the follicles the remaining conjunctivitis ought to be treated with astringents. Not in all cases was a lasting recovery attained. Relapses occurred in 15 per cent., which however ceased after renewed treatment. This procedure may be warmly recommended for severe cases with diffuse lymphoid infiltration of the conjunctiva. Its value seems to lie in the fact that the mechanical effect is enhanced by the use of sublimate. Bærenstein explains it thus: by the pressure, the follicles are destroyed and absorbed, and the sublimate abolishes the microbic agent of trachoma. Therefore it is applied with good success after the different operations of Sattler, Darier and others. Michel uses it with vaseline, with which he practices massage. Rosmini applies sublimate solution 1:2,000, or weaker, with an irrigator to the affected mucous membrane for 30-60 seconds; semi-biniodide of mercury in the same way. Pedrazzoli uses sublimate in a spray. Falta constructed a special forceps, with which, as cotton holder, the massage with sublimate can be done more thoroughly on all parts and recesses of the conjunctiva. Troussseau found pumice stone soaked with sublimate solution very effectual; and Stephenson touched the lid with a stick composed of one part sublimate and five parts chloride of potassium.

Massage has been used quite extensively with the following powders: boric acid, tannic acid, alum, iodoform, antipyrine; or with ointments of yellow oxide of mercury, iodide of potassium, creolin, resorcin, iodoform, or naphthol in combination with vaseline or crude kerosene oil. Solutions

of pyoctanin, creolin, carbolic acid, naphthol, some in permanent irrigation, have been recommended. Blue mercurial ointment has been rubbed on the skin of the lids.

Another method is the subconjunctival injection of iodine solution or other solutions. Schnabel does not treat the granulations at all, only the accompanying inflammation by the constant application of icebags, and afterwards he uses caustics. The destruction of the follicles by actual and potential cauteries, as well as by electrolysis, belongs rather to the surgical department.

If we compare the different remedies in regard to their efficiency, sublimate seems to hold the principal place.

Nevertheless it is quite interesting to see how the various authors and inventors of new applications, in case of failure, or for after treatment, returned to the caustic and astringent methods with nitrate of silver and sulphate of copper, which have been so long in vogue. Only a long time of careful observation will decide the real value of a remedy, since many of them will only act so long as they are fashionable. Medicinal treatment of trachoma cannot be done away with entirely, but the operative treatment will predominate.

Erysipelas Toxines for Sarcoma.

Coley (*Am. Jour. of the Med. Sciences*) reports upon the results obtained by injections of the toxines produced in cultures of the streptococcus of erysipelas in twenty-five cases. Six he regards as cured, one still remaining under treatment, the others having remained well from three months to almost three years after the cessation of treatment.

He concludes: The curative action of erysipelas upon malignant tumors is an established fact. This action is much more powerful in sarcoma than in carcinoma. This action is chiefly due to the toxines of the erysipelas streptococcus, which may be isolated and used with safety. This action is greatly increased by the addition of the toxines of the bacillus prodigiosus. The toxines to be of value should come from virulent cultures and should be freshly prepared. The results obtained from the use of toxines without danger are so nearly or quite equal to those obtained from an attack of erysipelas, that inoculation should rarely be resorted to.—*Polyclinic.*

THE COLD PACK AS AN ANTIPYRETIC.

J. R. CASE, M. D., WORCESTER, PA.

I wish to call attention to a remedy that is as old as our noble profession, having been used by Hippocrates himself; a remedy that has lately claimed the attention of the profession and deservedly, as it is at once a safe, simple and very efficient means of reducing the abnormal temperature of the body. It is the most distinctive of hydropathic appliances, and may thus be described:

Have a blanket spread upon a bed or crib, as the case may be, and then wring a sheet out of cold water, say at a temperature of 60° F. In the case of a child the sheet should be folded several times, and for the adult use two sheets. Spread the sheet over the blanket and upon it lay the patient, and fold sheet and blanket quickly over him. Then apply comforts or blankets tightly around the patient to exclude all air. The heat of the body acting on this damp linen almost immediately generates vapor, and the patient is very soon in a warm vapor bath.

The effects upon the body of a febrile patient must be very plain. It is a simple philosophical process in which the heat of the body is transferred to the cold water in the sheet by simple conduction. At the same time that the temperature is thus being reduced, the pores of the skin are being thoroughly cleansed and thereby better fitted to perform their important functions. The equalizing thus of the temperature over the entire body, equalizes the distribution of the blood through the system, thereby relieving congestions whenever occurring—as experience amply testifies. Lastly it slows the heart beats, reduces the arterial tension, allays nervous irritability, reduces the respiratory movements and produces a feeling of well-being in the patient. I have seen cases that could not be quieted by any ordinary means, fall into a peaceful slumber almost immediately after being put in a cold pack.

Its advantages over internal antipyretics are many, as must be apparent to even a casual observer. It can be quickly applied and as quickly removed, the

effects being under our complete control, for as soon as the temperature is within bounds we withdraw the remedy and the effects cease. It is also available in cases where it is utterly impossible to use internal medication, as I hope to show subsequently. It is safer because it depurates the blood instead of disintegrating it, as do many if not all of the coal-tar derivatives when used in efficient doses, as is evidenced by the accumulation of waste products in the blood, notably CO₂.

We know that pyrexia produces a haemolysis and rapid transformation of the latent or potential energy, which becomes manifest as heat. Therefore, to conserve this energy, we must reduce this temperature quickly, safely and pleasantly. In the cold pack we have a remedy that fulfills all the requirements, then why should we resort to internal antipyretics of the limits of whose destructive, or deleterious action we know little. I do not wish to relegate modern antipyretics to oblivion, for I think they have a very useful field, which, however, is limited. Experience has taught me that their prolonged use is dangerous and very unsatisfactory, and I think they should be replaced by the cold pack in all cases of prolonged pyrexia.

Dr. G. N. Davis, (*Med. Age.*), declares antipyretic drugs are of value only as nerve sedatives. He declares cold the best of all remedies for the reduction of temperature. With the latter statement I thoroughly agree; with the former I cannot fully concur.

I have had recourse to the cold pack in upwards of fifty cases during the past two years, all of which were desperate ones, all other means having been exhausted before I was permitted to use the pack.

Fully 90 per cent. of the cases recovered, and I do not think that 20 percent. could have done so without the pack.

The more fully to illustrate my views and substantiate the philosophical basis of the treatment, I will cite a few cases as they occurred in practice.

CASE I. I was called, Feb., '93, to see E. A., a child aged 5 years. I found him in a tetanic spasm; respiration 12 per

*Read before the Montgomery County Medical Society, July 11, 1894.

minute; jerky and irregular pulse almost imperceptible; temperature in axilla 104° ; eyes turned up and patient *in extremis*. I used the cold pack, and in half an hour the child was breathing easily; pulse 160, temperature 101° ; still some twitchings. I repeated the pack for fifteen minutes longer, when the temperature was 99.5° . and the patient was sleeping quietly. The pack was again used in four hours, and the temperature was easily controlled with small doses of phenacetine. Diagnosis *Meningitis*. I gave him Tinct. Digitalis, and Fluid Ext. Ergotæ, alternating with phenacein. After having his bowels acted upon, I had continuous cold applied to the head.

At the end of a week he was convalescing. His left side and particularly his left arm was partially paralyzed, as was also his speech.

CASE II. Walter G., child aged 7 months, was taken sick in July, 1893, with a severe attack of iliocolitis, from which he recovered with the usual treatment, but was very weak and emaciated. In about a week after this attack he was taken with intermittent fever, which continued for two weeks. I prescribed quinine by mouth and rectum, but in spite of everything the temperature would run up to 104° or 105° , and the child was approaching an extreme condition. So much so, that I thought he could not recover. I used the cold pack whenever the temperature ran above $101^{\circ}.5$, and the child became restless, with the effect to reduce temperature and quiet the child; he usually passing into a quiet slumber. He was unable to raise his head for one week after the subsidence of the fever. His pulse had been very feeble, and his surfaces withered; generally he had a chill about 5 A. M., when he was blue and his hands cold, friends thinking he was dying until they became accustomed to seeing him in that condition. He made an uninterrupted recovery under tonic treatment.

CASE III. I was called May 5, 1894, to see Walter G., aged 2 years, 8 months, and found him with high fever, temperature, $104^{\circ}.5$; stupid. I saw him in the evening and he had complained all the afternoon. I looked upon the case as one of malarial intoxication and prescribed quinine suppositories and small doses of phenacetine, and expected to find him better in the morning. I saw him again at 11.30, May 6th, when he was in a

spasm and unconscious, his parents thinking he was dying. His pupils were dilated, pulse 90, respiration 60, temperature in axilla, $107^{\circ}.4$. The case seemed hopeless. However, I used the cold pack, using water at a temperature of 56° , and had it renewed every 15 minutes. In half an hour the temperature had fallen to 104° , respiration 48, and spasm relaxed. I then left the patient, but ordered pack changed every 15 minutes until seen again, which was in two hours. Then his temperature was $99^{\circ}.5$; pulse irregular and intermittent 160; respiration 36; hands and feet cold. I ordered him wrapped in blankets and bottles filled with hot water applied to the feet.

R: Nitro-glycerine..... gtt. ij.
Digitalis..... gtt. ss.

Sig: Every hour for three doses, and then every two hours until seen.

Gave quinine suppositories of 10 gr. each. The child was now conscious and asked for some food when milk was given and he drank of it. The temperature ran up to 103° at 6 P. M., when the pack was again used, and he rested well all night. 6 A. M. of May 7th, the pack was used again. The pack was changed three times at intervals of 15 minutes. The temperature had been $102^{\circ}.9$ (previous to which he had a chill) reduced in three-quarter hour to $99^{\circ}.5$.

On May 8th, the temperature was 99° ; resp. 24; pulse 120, regular. May 10th, temperature ran up to $104^{\circ}.5$ at 1.30 A. M., pack was used, and at 3.30 A. M. temperature was $101^{\circ}.5$; at 5 A. M. temperature was $102^{\circ}.9$, pack used. Temperature $102^{\circ}.5$ at 7 A. M. At 9 A. M. $100^{\circ}.9$. At 12 M., 99.5° , pulse 116. From this time on he made an uninterrupted recovery.

I have used the pack with the most gratifying results in pneumonias of children when there seems to be an inevitable dissolution.

I trust I have said enough to bring the treatment before you in a way that may cause you to at least consider it a valuable therapeutic means if you have not already done so.

DR. BOUCHARD says that a simple and easily applied means of recognizing in a certain and indubitable manner the presence of death is by noting the temperature found in the armpit. If it descends below 68° F., it is a positive sign of death.

COMMUNICATIONS.

EARLY DIAGNOSIS OF CANCER OF THE UTERUS.*

EDWIN RICKETTS, M. D., CINCINNATI, OHIO.

It is not my intention to ask you to consider the latest discovery of a startling nature in pathology by "trotting out" another little beast of a formidable appearance, at least on the microscopical slide, with a personal desire that it might be added to the already extensive "Bacteriological Menagerie." Instead I bring for your consideration an old subject, trusting that the discussion may be fruitful in causing not a few earliest possible diagnoses, which I take to be the greatest and foremost step in doing an operation, that when done early promises more than does a late operation.

Cancer of the uterus is abroad in the land, and every member of this society has had these cases referred to him by the attending physician, with both patient and physician desirous of as much comfort as possible by the prolongation of life, if a cure cannot be hoped for.

We have cases reported of early diagnosis of cancer of the breast, followed by prompt extirpation of the gland, with non-recurrence even after five, ten, or more years. Why are we not to expect better results for as early an extirpation of the cancerous uterine globe, in which the disease is known to develop more slowly than in any other portion of the body?

We, as operators with some cause for complaint, say to the general practitioner, who sees these patients previous to consulting us, that we do not see them early enough to offer a procedure that promises the most in the way of relief, if not a cure; while the general practitioner has the best of the argument when he asks justly for more light—that is, how is he to see these cases earlier, and when once seen how is he to be able to make the earliest diagnosis?

1. Let him impress upon the minds of every adult married female that may consult him that cancer of the uterus is more liable to make its appearance between thirty-five and fifty years of age.

2. That a leucorrhœa followed by a watery discharge, that soon becomes red,

and in time offensive, staining the linen a dirty, yellowish-red, are symptoms demanding prompt consultation with the family physician as soon as the first-named makes its appearance.

3. That he may have at his command three common and yet all-important aids. viz., those of sight, smell and touch. With these special senses properly educated, he seldom need be at a loss to make the required early diagnosis. Such a practitioner will not make a hurried, casual examination through unloosed skirt-bands and attempts to excuse himself by telling the patient that she is "having her change of life," and will be all right soon.

With prompt action on the part of the patient and physician, operators can offer a cure in a number of cases by means of the vaginal or the combined hysterectomy, with a desired prolongation of life in the remainder.

The physician possessing a normal nose, one index finger, one middle finger, one or two eyes, is peculiarly fortunate as to expense, for they cost not a thing. True, they do not glisten so brightly, nor possibly do they impress the laity so profoundly, as the attractive recently imported microscope that is so kaledioscopic, even in the hands of our trans-Atlantic myopic brethren, who are giving special attention to pathology as seen through the microscope. The operator should not attempt the work of the pathologist in connection with his work, nor should he be microscopist to himself.

For convenience we will divide the uterus into three sections.

1. The neck—that portion protruding from the upper end of the vaginal tube and into it, and which stands almost erect.

2. The attached—that tissue partition that separates the vaginal tube from the abdominal cavity.

3. The fundus—that portion of the uterus that lies within the lower portion of the abdominal cavity, save being covered by peritoneum.

Early cancer of the uterine neck can be felt and seen without dilatation of the uterine canal, in part or entire, and it can

* Read before the Obstetrical Society of Cincinnati, 1894.

be seen and felt near the beginning of the leucorrhæal discharge; while cancer beginning in the attached or fundal portion is not recognized until the leucorrhæa and watery discharge is accompanied by the smelling discharge, unless the uterine cavity has been dilated as soon as a suspicious discharge begins.

Cancer beginning in the cervix spreads more rapidly to the attached and fundal portion; beginning in the attached or fundal portion it spreads to the neck; this latter form is longer amenable to treatment.

In multiparous cervices cancer is more easily recognized, while trauma is credited as the main exciting cause. In the non-multiparous uteri, in which cancer begins at the attached or fundal portion, we can not consider trauma as the main cause. With the earliest possible diagnosis of cancer, be it situated in the neck, attached or fundal, or be it found in all three localities at the same time, pregnancy should not be entertained by the primary or secondary uterine possessor nor by the physician. Under such circumstances it becomes a highly offending member, just as much so as a cancerous eye, an osteo-sarcoma or a malignant mammary gland.

Cancer is a new growth, and in time breaks down; there is never any attempt at repair of the invaded tissue; it goes from bad to worse. There is a highly reddened condition of the tissue surrounding the growth, while the growth and surrounding tissue are tender and in a short time bleed easily when the probe, speculum or finger comes in contact with the same. The growth and surrounding tissue are engorged with blood, and when breaking down takes place depletion helps to reduce the size of the parts. The same is true with cancer located and breaking down in the attached or fundal portion.

Do what you may in internal medication with local application of remedies, the loss of tissue as the result of cancer is never to be replaced by healthy tissue. In the very early stage the membrane covering the suspicious growth is smooth, while beneath it and through it the sense of touch alone will reveal the character of the nodule that soon, if the uterus is allowed to remain, is to prove so serious. In the early stage of the developing nodule the membrane covering the same

is of a pink-white color, while that covering the surrounding tissue is somewhat of a deeper red; pressure of any kind gives pain.

Cancer located on the neck may look and feel like hard or soft nodules, or granular erosions may surround the os externum, but it differs with cancer, as it has a soft edge, while the mucous membrane has high points scattered and gradually sloping around within the soft border; it bleeds easily, but does not slough, and with no treatment soon shows signs of repair.

The walls of a cancer nodule on the verge of breaking down are formidable, while its middle is depressed and the body catacombed, the result of sloughing.

In a follicular cervix the needle or bistoury will differentiate by a puncture of the follicles; you can rub any scarlet patch without causing the same to bleed.

Be the cancer located in the neck, attached or fundal portion, the first and second cardinal symptoms, those of leucorrhæa followed by watery discharge, are present. Later, as the result of breaking down, the characteristic odor makes its appearance; with such a change of symptoms present, not complicated by a non-malignant polyp, cancer should be promptly diagnosed.

So soon as a leucorrhæal discharge, with or without cancer of the cervix being made, followed by a watery discharge, with the first detectable odor that is not the result of non malignant polypus, vaginal hysterectomy, with or without the combined method, is the only procedure to be considered.

With a cancerous deposit in which the characteristic bloody, watery, bad-smelling discharge has existed from three to six months as a result of the breaking down cancerous tissue, nothing can be promised in a cure, but much can be promised in comfort to the patient, with possible prolongation of life, especially in cases where cancer begins in the attached or fundal portion of the uterus.

In the diagnosis of this disease, the microscopic aids have been disappointing—even misleading; if, under the present delayed early diagnosis of the uterus, as a result of depending too much and too long upon the microscope, we are to make our escape, it is to by intelligently *feeling* and *seeing* early, along with the earliest possible detection by *smell*.

TRANSLATIONS.†

TRACHEAL FISTULÆ.

In *Le Bulletin Medical* for July 1, 1894, Kirmisson reports the case of a young man 16 years of age while suffering with croup submitted to the operation of tracheotomy and was cured of his laryngeal disease. Since then he had been compelled to wear constantly his canula. As a result the boy prevented that rare condition a tracheal fistula. Kirmisson removed the canula and found that the boy was able to breathe without it without any difficulty; the external orifice of the fistula commenced to close, and 15 days after the removal of the canula when the boy was shown to the class a deep depression was found at the middle portion of the neck. At the center of this excavation was a small orifice irregularly ovoid, preventing a vertical diameter of 7 to 8 millimeters and a transverse diameter of 5 millimeters. Through this orifice could be seen the mucous membrane of the posterior wall of the trachea presenting a very pronounced reddish tint. The air passed freely through their orifice but on closing it respiration was not impeded through the natural channel.

This condition following tracheotomy is very rare. This is not, however, the only variety found. Fistulæ exist due to traumatism, particularly to knife-cuts in attempted suicide. In this case, the solution of continuity is situated high up; there is also found a laryngeal wound, and consecutive to this a laryngeal fistula. Military surgeons have described lesions of the same kind consecutive to gun-shot wounds, the ball producing a veritable loss of substance of the anterior wall of the trachea. In another class of patients we find tracheal fistulæ consecutive to suppuration of the larynx engendered by laryngeal tuberculosis or syphilis. After opening of the abscess, there is often discharge of the necrosed cartilage, the orifice does not tend to close, and instead under the influence of a prolonged suppuration its edges organize gradually and a laryngo-tracheal fistula is thus produced. The reason that fistulæ are rare after tracheotomy is due to the fact that the canula is as a rule not permitted to remain long enough to result in this complica-

tion. The conditions that necessitate a prolonged retention of the canula, are in the first place, paralysis of the vocal bands consecutive to diphtheria and opposing the passage of the air through the normal passages. Alongside of this cause, which is not very frequent, we find another which has been noted by a large number of surgeons, viz:—the production of fleshy polyp-like growths, at times quite voluminous, which form in the trachea and which, drawn in during inspiration, resist the passage of air. These are most common at the upper angle of the tracheal wound and on the posterior wall of the trachea at the point where the canula exercises a true permanent traumatic action. A third cause presenting the removal of the canula, and this is undoubtedly the most frequent cause, is the chronicity of the affection for which the tracheotomy has been practised. There exists thus a true obliteration of the larynx, as in certain cases of tuberculosis or syphilis of the larynx.

It may then be seen that tracheal fistula can exist in two different conditions. Either the larynx is free and it is the only lesion which should engage the surgeon, or else the fistula coincide with grave lesions of the larynx and trachea, and principally with a stenosis; in this case the situation of the disease is quite another. The *symptoms* of tracheal fistula are not numerous or important. There is generally in the median line of the neck a deep depression, a sort of infundibulum at the base of which a small orifice leads into the trachea. The skin is invaginated and becomes continuous with the tracheal mucous membrane. The dimensions of the fistula are generally small.

The operative procedures for the cure of tracheal fistulæ are numerous enough to permit of a classification as follows: 1. These processes of autoplasty in which there is dissected and used a flap of tissue in the vicinity of the fistula. 2. These processes in which there is simple employment of the skin without previous cutting of the flap.

These different operative procedures have all succeeded in some cases and failed in others. Kirmisson prefers the methods of Berger and Lehart.

† Translated for THE MEDICAL AND SURGICAL REPORTER, by the translators W. A. N. Dorland, M. D.

THERAPEUTICAL SUGGESTIONS FROM FOREIGN JOURNALS.*

THYROIDINE IN MALIGNANT PRECOCIOUS SYPHILIS AND OBESITY.

Dr. J. D. Menzies (*La Semaine Médicale*, No. 43, 1894,) of the English Navy, has had occasion to treat several cases of malignant precocious syphilis, an affection which is particularly frequent amongst the Hindoos. The patients were cachetic, bearers of squamous, ulcerating and osseous lesions where the mercurials and iodides had been administered, in vain. The dry extract of the thyroid glands of sheep was given, in the form of tablets, 25 to 50 egms. per diem, while all specific medication was suspended. In all these cases he obtained a more or less considerable amelioration of the local as well as of the general condition. The cutaneous and osseous lesions healed, at least partly, and the pigmentations following the skin lesions disappeared as well.

Another English physician, Dr. N. Yorke-Davies, of London, has discovered these same tablets to be a precious addition to the treatment of obesity. Thus in patients placed under both an appropriate diet and treated with thyroidine the decrease in weight was from two to three times greater by dieting alone.

TREATMENT OF INCIPIENT CONSUMPTION.

Prof. Potain (*La Rivista Clinica e Terapeutica*, No. 6, 1894,) speaks highly of the iodides in incipient pulmonary consumption, and especially in the following formula:

R	Chloride Sodium.....	20	o (3v.)
	Bromide Sodium.....	5	o (3jss.)
	Iodide Sodium.....	2	o (grs. xxx.)
	Water.....	200	o (3viss.)

A teaspoonful two to three times a day in milk. If chronic catarrhal symptoms predominate, turpentine and tar preparations together with creasote may be found serviceable; these will be harmful if the suggestion be intense. It is wrong to regard creasote as a specific in tuberculosis. The sulphurous mineral waters are also useful though these are rather appropriate to cases with gastric catarrh, without much tendency to congestion. The general nutrition deserves attention with especial predominance of fatty foods. Cod-liver oil is hence here indicated, though if

not tolerated, milk and butter may replace it. For the night sweats the phosphate of lime, in large doses, especially of the insoluble preparations, is valuable; excellent results follow the administration of the neutral phosphate in doses of four, six or eight grains a day. The diathetic conditions should also be combatted. In syphilis, specific treatment; in arthritism, the salicylate of soda—in short, the indications will differ according to a diligent study of the symptoms of each case.

CALOMEL AND TRAUMATICINE IN SYPHILIS.

Dr. F. Cauchard (*La Semaine Médicale*, No. 43, 1894,) has recently tried a mixture of traumaticine with 25 per cent. of calomel in the treatment of syphilis. The patient after a bath has his eruptions, especially the more extensive ones, or, instead, the whole back be painted with this preparation. After evaporation of the chloroform—traumaticine consists of a solution of ten parts of gutta percha in ninety of chloroform—there remains a coating of varnish which is closely adherent to the skin. This is renewed three times a week, until the secondary manifestations have disappeared. After its use the secondary eruptions have been observed to disappear, in twenty to thirty days; it is especially in papular, pustular and squamous syphilitides that it has been found valuable. This method has the advantage of enabling one to combine general with local treatment. It would seem particularly indicated in weakly subjects who cannot tolerate the internal use of mercury as well as in children with hereditary syphilis and in the management of late cutaneous manifestations.

CHLORIDE OF ZINC IN OTITIS MEDIA CRANULOSA.

Drs. Rottel and Montalescot (*Wiener Medizinische Presse*, No. 27, 1894,) recommend highly the chloride of zinc in suppurating inflammation of the middle ear, with granulations. Morning and evening the patient is to inject into the ear a syringeful of the following solution:

R	Chloral.....	3	o (grs. xlv)
	Borax.....	4	o (5j)
	Distilled Water.....	1000	o (3viss.)

This solution is both antiseptic and antodyne. Three to four times a week the

* In charge of the Translator, F. H. Pritchard, A. M., M. D.

granulating points are cauterized with a solution consisting of one gram of the chloride of zinc to thirty grams of water. A small tuft of cotton is wrapped around the tip of a probe and dipped into the solution is introduced into the tympanic cavity through an ear speculum. The sensation of resistance felt by the operator will show that the tampon has reached the wall of the cavity. The probe is then carefully turned around in order to touch all the diseased mucous membrane. The first cauterization will cause slight hemorrhage which will yield to injections of warm water. The chloride causes a destruction of the granulations and a fibrous alteration of the mucous membrane and the remains of the tympanic membrane; a cure may be expected in three to four months, a relatively short time for such an obstinate disease. In cases where the granulations reach out into the meatus they may be removed with the curette or the cold snare and the bleeding surface cauterized with a 10 per cent. solution of the chloride and then the described method carried out. Treatment by this preparation of zinc is exclusively indicated in the granulating form of middle ear inflammation; it is contraindicated in the simple, hypertrophic and ulcerating forms.

TREATMENT OF HEMORRHAGE FROM THE BLADDER.

Dr. Poussond (*Wiener Medizinische Presse*, No. 29, 1894) offers several useful hints in the management of this symptom. He does not think that rest is indicated in all cases. If from a stone it is of course necessary, as the dorsal position often alone suffices to cause hemorrhage to cease; in other cases this position may favor congestion. As to drugs he recommends poultices containing opium to the region of the bladder, opium and belladonna internally, especially morphine subcutaneously to reduce the vesical irritability. Intra-vesical injections he would have entirely left alone as they cause coagulation and increase irritation. If they be required from urgency of the moment they should be given after evacuation of the bladder and those drugs favoring coagulation avoided. The choice of a styptic is not immaterial. Ergot causes contrac-

tion of the bladder and irritates the muscle fibres; matico, gallic acid and the preparation of alum containing iron, are preferable. In congestive hemorrhages of prostatic affections he much favors matico in infusion, in a daily dose of thirty grams. In profuse hemorrhages he employs gallic acid, in the following formula:

R	Gallic Acid.....	1.0-1	5 (grs. xv-xxij.)
	Syrup Opium	30	o (5ij.)
	Syrup Bitter Orange Peel aa	60	o (5ij.)

Distilled Water..... A teaspoonful every hour.

The ferric alum may be employed instead of gallic acid and in the same dose. Both of these remedies are powerful hemostatics and are only to be used after other means have failed.

A HOMEMADE MEAT POWDER.

Dr. W. R. Huggard (*Muenchener Med. Wochenschrift*, No. 25, 1894) gives a convenient method of preparing a powder from meat to be used on a nutrient. Lean meat is cut into small pieces; these are dipped for a few minutes into hot lard until the surface is browned, then taken out and allowed to drain on a sieve. They are then cut into fine pieces and dried in an oven for twenty-four hours with a slow fire. The meat thereby becomes dry and brittle and is easily ground in an ordinary coffee mill. By this process of roasting it has lost four-fifths of its weight. This meat powder has a very agreeable taste and a fine aroma. It may be administered in the most different ways as in hot water, as a tea, mixed with mashed potato, on bread and butter as a sandwich, with or without the addition of pepsin. It is very easily digested, tolerated by the most delicate stomach, and it may be kept, if dry and excluded from the air, for a long time.

LOCAL ANESTHESIA BY INJECTION OF COLD FLUIDS.

Dr. Létang (*Bulletin Médical*, No. 48, 1894) recommends subcutaneous injection of cold fluids for the production of local anesthesia. To reduce whatever fluid that may be used to the proper degree of cold he advises a mixture, by weight, of eight parts of sodium sulphate and seven parts of hydrochloric acid. A test tube con-

taining a solution of common salt, (0.5-1 per cent.) is placed in this fluid. If the temperature of the freezing mixture has sunken to 10°c, that of the salt water will be found to be 0°c. The syringe is filled with this and the injection made which causes neither pain nor induration at the place of injection, but a complete and long lasting anesthesia. Instead of this salt solution any other may be used which will reduce the temperature to 0°c. He recommends the following as the best:

R Sterile Distilled Water 100 | 0 (3ijij 3j.)
Pure Glycerine, 22..... 2 | 0 (gits. xxx.)
Ether.....

This mixture is easily kept, and may be employed even to ten injections at a time of ten grams each. It is quite sufficient for the requirements of ordinary practice. In a number of minor operations where cocaine is usually employed in extraction of teeth, removing of ingrowing toenail, amputation of fingers and toes, this method gave good results. Also in the treatment of obstinate neuralgias, of the trigeminus, intercostal and sciatic nerves the injections were successfully made into the region or the substance of the nerve.

GLYCEROPHOSPHATE OF POTASH IN NERVOUS DISEASES.

Prof. Jolly (*Muenchener Med. Wochenschrift* No. 25, 1894,) has employed the glycerophosphate for the last ten years in the treatment of all nervous diseases. As they are all dependent upon an augmented excretion of phosphates from the nerve-cells the treatment is according to him, quite simple and should consist in supplying phosphorous again to these tissues. The best form is the glycerophosphate of potash as this element is found in the nerve centres and elements.

TREATMENT OF ERYsipelas BY THIOL.

Dr. Rudneff of St. Petersburg (*Hospitals Tidende*, No. 19, 1894,) has obtained good results in erysipelas by application of a forty per cent. solution of thiol to the affected parts, five times a day.

EPILATORIES AS ANTISEPTICS.

Dr. Annequin (*La Semaine Médicale*, No. 43, 1894) has employed certain epi-

lating substances as the hydrosulphate of calcium or the sulphate of barium to remove hairs and act as antiseptics where it is impossible to remove all the hairs by shaving and at the same time to render the part completely antiseptic as in operation on the perineum, the scrotum, etc. He adds the hydrosulphate of lime to water until it acquires a pasty consistence when it is applied to the region to be epilated. Epilation is complete in ten minutes, at least, without the least irritation or pain. The follicles are not destroyed for the hair will reappear after a few days. The sulphate of barium may be formulated as follows:

R Sulphide Barium,..... 10 | 0 (3ijss.)
Powdered Starch,..... 5 | 0 (3ij4.)
Oxide Zinc, 22.....

This powder should also be added to have water added until it forms a paste.

CEYLON CINNAMON AS A PALLIATIVE IN CANCER.

Dr. J. C. Ross (*La Semaine Médicale*, No. 43, 1894,) has found that the internal use of the bark of Ceylon cinnamon is an excellent palliative measure in the treatment of carcinoma of various internal organs; it must be given in large doses. He employs the following formula:

R Ceylon Cinnamon Bark.... 350-400. (3xj-xij.)
Water..... 3 litres. (3 qts.)

Boil this mixture down to a quart. Decant without filtering. Take a pint every twenty-four hours by the half-glassful, preferably after eating. Shake the bottle well before taking.

This treatment has given him good results in carcinoma of the stomach, breast, tongue, rectum and uterus. The principal effect is to quiet the pain, decrease the odor and improve the general condition of the patient. With this treatment patients who have been for a long time under morphine have been able to dispense with this drug.

Must Have A Large Collection.

Mabelle—Brother Tom always gives me a bracelet every birthday.

Edith—You ought to start a jewelry store.—*Chicago Record*.

CORRESPONDENCE.

"DO NOT TURN OUT THAT CLOT."

EDITOR OF MEDICAL AND SURGICAL REPORTER:—Your editorial "Do not turn out that clot," in the August 4th, number of *REPORTER*, struck me the more forcibly on account of an occurrence in my own practice a month ago.

I was called to attend a lady, who was as near a wreck from malaria poisoning and neglect as I ever saw. The first of a pair of twins came away all right, alive. I found the second one dead. On passing the hand I found the placenta was attached to the left side, and partly over the mouth of the womb, which had caused excessive hemorrhage. I ruptured the sac and placed the head in position, and the dead child came away. The womb contracted down to the usual size and I was congratulating myself, when, on examining, I found the womb nearly double its size of half an hour previous.

I made an examination and found but very little flow from the vulva; I had given nitro-glycerine and strychnia, as also ergotole. Whatever was to be done! I was afraid to meddle any more, so awaited reaction—pulse down to 20 beats and hardly perceptible, and respiration about

the same. I thought I had a dead woman on my hands. Well, I waited half an hour. No one present but an ignorant old negro and myself. Gradually the pulse became stronger, then a little more frequent. I do not know how near a faint the lady was, because I did not look. She was perfectly limp; head on level with body. It was a dull half hour for me. But the rally was good and held all right. I applied hot cloths, etc., over abdomen, gave opiates and left seven hours after. My next visit, twelve hours afterward, found womb gradually reducing in size, and all doing well. I argued from the amount of blood lost from such a case (nearly a gallon,) it was best to let the clots alone—because the womb was hard, not flacid, and the clots would answer as a tampon.

Your editorial convinces me that in *this case* I had done the right thing. This is the first case of the kind that I have encountered. It makes me feel "queer" still, when I think of the hours I looked and waited at that time.

Fraternally,
BRODNAX, LA. BEN. H. BRODNAX,

CHRISTIAN SCIENCE.

EDITOR MEDICAL AND SURGICAL REPORTER:—In Dr. Longsderf's article on "Christian Science and its relation to the Medical Profession," in the August 11th, number of your *JOURNAL*, after admitting that there were thousands of instances of authentic cures on record as a result of christian science, she faces about and says "The importance of some definite restraining force for these abuses can scarcely be overestimated, and if public opinion and the advanced *philosophical science* of our era have been powerless to effect this, it would seem to come into the province of legislative enactment."

This is unjust, inhuman, selfish and cowardly. We would hardly expect one

of the *gentler sex* of our profession to advocate such hard measures. We should not imprison our fellow-mortals simply because they effected cases that baffled our skill. "If ye have faith like a grain of mustard ye can remove mountains."

We are materialists. We look at our patients as mere machines. We forget that they are endowed with souls, (whatever that may be.)

We bow down and worship a lot of microbe resurrectionists, who were never in a sick room except that of dogs and guinea pigs, and have them dictate to us the quickest way to obtain a post-mortem.

To read some of the articles of our specialists, one feels that it is impossible

for any to die—and yet a glance at the death rate will reassure one that St. Peter is kept as busy as of yore examining passports. We should hail with delight any measure that has effected "thousands of cures," whether our dull minds can comprehend the rationale or not. For there is not an anatomist, or histologist, or physiologist, or neurologist living to-day

who has a clearer insight of what *life* really *is*, than had the Father of medicine.

"There are more things in heaven and earth, Horatio, than are dreamt of in your philosophy."

Yours truly,

J. NEWTON HUNSBURGER,
SKIPPACK, PA.

A CORRECTION.

EDITOR MEDICAL & SURGICAL REPORTER:—I have just noticed an important error in the report sent you of my demonstration of "A new Method for Reduction of Fractures of the Lower End of the Radius" before the Philadelphia County Medical Society which recently appeared in your valued journal.

The second paragraph should read:

"The surgeon stands in front of the patient and interlaces his fingers beneath the *pronated* wrist and palm of the injured member," etc., not "*supinated wrist*" as printed. As all that follows depends upon the wrist being in pronation.

Very truly,

THOMAS S. K. MORTON.

TREATMENT OF DYSMENORRHœA.

After detailing the remedies usually employed in the relief of minor degrees of menstrual pain, such as antipyrin, phenacetin, codeine, etc., Schwarze remarks that in many cases of obstinate character local treatment is generally necessary. This, however, many patients are unwilling to undergo; and in the case of virgins it is very undesirable that they should be subjected to it. In that event, Schwarze mentions two modes of treatment of some value which have not received the attention they deserve. The first is the gymnastic treatment introduced by Thure-Brandt. It is necessary here to distinguish between dysmenorrhœa in which inflammatory processes are present, and that where they are absent. In the latter class, to which the menstrual pain of most virgins and sterile women belongs, this method is of particular value, whether anaemia or chlorosis be present or not. It is a general treatment of the body, though the movements recommended by Thure-Brandt for this purpose

are limited to five, and are carried out chiefly with the lower limbs. These may be conducted at home by the patient's friends. If possible they should be performed daily, and in any case daily for a week before the expected menstrual period. The influence of bodily movement upon the lessening of dysmenorrhœa is shown by the beneficial effect of dancing and riding just before the onset of menstruation. The second remedy that is worth consideration in obstinate cases is the administration of viburnum prunifolium. Its action is narcotic, relieving pain and acting more particularly on the uterine nerves, and is of especial value in the non-inflammatory form. It may be given in the form of fluid extract, one teaspoonful three times a day for about a week before the expected period, and during it. It is not unpleasant to take, and is free from after-effects. In dysmenorrhœa associated with inflammatory changes it is of little use.—*Therapeutische Monatshefte*.

THE MEDICAL AND SURGICAL REPORTER

ISSUED EVERY SATURDAY

HAROLD H. KYNELL, A. M., M. D.
Editor.

PENFIELD PUBLISHING COMPANY
Publishers.

Asbury Park, N. J.—1026 Arch Street, Philadelphia, Pa.

TERMS.—Three Dollars a year, strictly in advance. Sent four months on trial for \$1.00.

REMITTANCES should be made payable only to the Publisher, and should be made by Postal Note, Money Order or Registered Letter.

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SATURDAY, SEPTEMBER 1, 1894.

EDITORIAL.

THE DETECTION OF TYPHOID IN WATER.

The communicability of typhoid fever by drinking water, has become one of the cardinal principles of sanitary science. On this account water becomes one of the efficient channels through which the virus of this most dreaded of fevers can gain access to the body. The possibility of the infection of water is readily understood when the fact is considered that typhoid bacilli will live in water for many days, thus being capable of a wide area of dissemination from the infected source. These facts and their direct bearing upon the occurrence and frequency of typhoid fever in certain localities, are well known to physicians and need not be discussed anew.

The importance, from a sanitary standpoint, of being able to detect the presence of these bacteria in water suspected of conveying them, is a matter both of interest and of controversy. It may be said that the most difficult feature in their detection is the differentiation of typhoid bacilli from the other bacteria, more especially *Bacillus coli communis*, which resembles them very closely in their morph-

ological characters. A brief summary of the more important and practical methods for differentiating these bacteria and of detecting typhoid bacilli will be of interest.

Behavior in milk. Dunbar *Zeitschrift für Hygiene*, 1892, p 491,) has pointed out anew the difference in the reaction of these bacteria in milk. In sterile milk, the typhoid bacilli render the liquid slightly acid but never bring about its coagulation. On the contrary, *Bacillus coli*, at the temperature of the body, coagulates the milk in from twenty-four to forty-eight hours, at the same time rendering it strongly acid in reaction.

The production of gas. Smith (*Centralblatt für Bakteriologie W. Parasitenkunde*, xi (1892) p 367,) pointed out the fact that the typhoid bacilli when grown in bouillon containing certain sugars, in the fermentation tube, did not produce any gas, while the colon bacteria produced a large quantity of gas composed of CO₂ and H.

Uffelmann's Method. This method, described by Uffelmann (*Berliner Klin.*

Wochenschrift, 1891, No. 35, p. 827,) is based on the idea that very few bacteria can grow in a culture medium as strongly acid in reaction as can the typhoid bacilli. For the demonstration of this method the author used gelatin to which a definite quantity of citric acid (eight drops of a 5 per cent. citric acid solution to 10 c.c. of gelatin) and methyl of violet have been added. The typhoid colonies assume a blue color, which becomes more intense with their age, and is finally of a more deeper tint than the surrounding gelatin. By means of this method, Uffelman states that he was able to so far eliminate other organisms that a water, in which by using ordinary gelatin 12,500 colonies were obtained, when tested by this special method exhibited only nineteen. From another sample instead of one hundred and eighty, only eleven colonies appeared, and of these, six are stated to have been composed of typhoid bacilli. The method, however, has been shown to possess certain elements of disadvantage, as sometimes the typhoid bacilli fail to grow in it, and Dunbar showed that *Bacillus coli* will grow as vigorously as the typhoid bacilli in this medium.

Parielli's Method. This author found that typhoid bacilli were capable of growing in bouillon containing a considerable quantity of carbolic acid, while *Bacillus coli* and other bacteria failed to develop.

Frankland (*Micro-organism in Water*, 1894, p 273,) shows that the period of incubation must extend over at least forty-eight hours, especially when the number of typhoid bacilli is small. The solution used in the test is composed of five per cent. carbolic acid, and four per cent. pure hydrochloric acid in distilled water. From three to nine drops of this solution was added to each tube of 10 c.c. of bouillon. Vincent (*Compt. rend. Sciences de la Soc. de biologie*, 1890) endeavored to destroy bacteria other than typhoid, in water, by shaking it up with a five per

cent. solution of Phenol before making the plates. While this method may enable one to eliminate many species of bacteria, Vincent himself acknowledges that *Bacillus coli* could not be eliminated by this process. Dunbar has clearly pointed out the fact that *Bacillus coli* is able to withstand a larger quantity of phenol than typhoid bacteria.

Several other methods of applying phenol to culture media have been suggested. The facts in hand, however, show that it is of little or no value in differentiating the typhoid and colon bacteria. By the judicious application of phenol, there appears to be no doubt that the discovery of typhoid bacteria is greatly facilitated. On subsequent plate cultivation the colonies will be limited to those of *Bacillus coli*, the typhoid bacillus, and possibly a few other forms. Any colonies at all resembling those of typhoid bacillus must then be further examined. For purely differential purposes, the character of the growth on gelatin, the production of gas when grown in a bouillon containing glucose in the fermentation tube, and by cultivating it in milk for the coagulation of the casein. The production of iodol is also a property of the colon bacteria not possessed by the typhoid bacillus.

Care of the Teeth.

A dentist advises that acids are even worse than sweets upon the teeth and inveighs against the eating of oranges and apples at night without carefully rinsing the mouth afterward. Persons, too, with sensitive teeth, who dread the hour in a dentist's chair, will find their suffering somewhat relieved by being careful what is eaten before the appointment. Acids that set the teeth on edge are a poor preparation. The same authority recommends a small rubber band as the best toothpick. These are really better than the dental floss often advertised, or certainly quite as good, and much more apt to be at hand.—*New York Times*

ABSTRACTS.

THE ANIMAL PARASITES WHICH WE OBTAIN THROUGH OUR FOOD.

Dr. Wardell Stiles, Zoologist, Bureau of Animal Industry, U. S. Department of Agriculture, in a lecture before the Sanitary League of Washington, D. C., says:

As I am to show you some of the animal parasites which we may obtain from food, permit me to invite you all to lunch with me for half an hour or so, that you may see some of the wonderful objects it is possible for us to swallow without knowing it. The repast, to which I now invite you, is not such a one as you would yourself prepare, but it is one which might be prepared by the ignorant and slovenly servants of ladies who consider it a disgrace to know anything about household matters. For your comfort, however, I will tell you that a number of the parasites which I shall mention are not found in Washington, except as specimens in the various scientific collections,

The first course consists of soup—let it be any kind you wish, bouillon, mock-turtle or anything else. As we are about to take a spoonful we notice a curious object floating around in it, which upon closer inspection turns out to be a small beetle (*Blaps mucronata*) closely related to our death-watch beetle. If we swallow this bug, the insect itself would not injure us in the slightest, for it would be digested, but according to the investigation of an Italian zoologist, a little organism lives in this insect which, upon coming into our digestive tract and becoming free from the body of the bug, develops into the parasite known to the scientist as a thorn-headed worm (*Echinorhynchus moniliformis*). This is a curious worm about 2 to 4 inches long, with a strong proboscis on its anterior end, armed with several rows of hooks. Like many other parasites, it possesses no intestine, but, fastened with its head in the wall of our digestive tract, it floats in the contents and absorbs nourishment through its entire outer surface. For your comfort I will state that this is not a common parasite in man, but lives in rats. The rats scatter the eggs around, and these are swallowed by beetles, in which the larval form develops. When the insects are eaten by rats, or persons, the larval then develops

into the adult and the life-cycle is thus completed. It may be interesting for you to know that when the Egyptian ladies wish to become stout, they are said to eat a beetle of this genus, and thus they lay themselves open to possible infection with these worms. Perhaps instead of finding a *Blaps* in our soup, we discover some other bug, say a small butterfly, by the name of *asopia farinalis*, or a beetle known to scientists as *akis spinosa*. In that case, instead of becoming infected with the thorn-headed worm, we should have caught a small tape worm (*Hymenolepis*).

You may think I have stretched a point by saying that these bugs may be found in soup, but I assure you that it is not an uncommon occurrence to find insects in soup, and that people swallow these insects, containing the germs of various parasites, is shown by the fact that the parasites I have mentioned occur in man and that the only way he could possibly catch them is by swallowing the insects I have referred to.

While our soup plates are being removed we unconsciously nibble at a piece of bread, at the same time that we are discussing the weather or some other equally exciting topic. Now let us suppose that this bread was cut by our cook—who, as I intimated, is not the most cleanly person in the world. The cook may herself be infected with pin-worms; she has unconsciously gotten some of the microscopic egg upon her hand, and in cutting the bread has unconsciously transferred them to the bread. They are too small for us to see, and in eating the bread, we accidentally become infected with these germs. Pin-worms (*Oxyuris vermicularis*) are among the most common animal parasites found in human beings; probably fully one-fourth, possibly one-third, of the persons in this room have at some time during his or her lifetime harbored these creatures. If only a few worms were present, we were not troubled very much, but if many were present, we probably were quite unhappy for the time being, notwithstanding the enormous doses of soothing syrup or other mixture which our well-intending mothers gave us to keep us from being so restless during the night,

little suspecting what the real cause of our restlessness was.

These parasites are, as I have said, very common and may be obtained through solid food which has been handled by persons who are affected with them, and are not careful enough about washing their hands, or they may be obtained through unfiltered or unboiled drinking water, or through milk, when the milk-can, before leaving the farm, or even afterwards, has accidentally (?) stood for a few minutes too near a contaminated water supply.

If our servant has allowed the lid of our bread-box to stand open, and the mice have gotten in there, they have scattered on the bread microscopic parasites known to the zoölogist as *Megastoma intestinalis*, and as we eat the bread we become infested with these germs also.

Our fish has now been served. Some of us have taken pike, others have taken turbot, still others have chosen some other fresh-water fish, but the essential point is that the fish has not been cooked enough. As we are eating this fish, one of us, who perhaps has sharper eyesight than the rest, discovers a white object, about one-fourth to one-half inch in length, which differs slightly from the muscle. This object upon closer inspection proves to be the germ or larval stage of the broad Russian tape-worm (*Bothricephalus latus*) which is the largest parasite found in man. The worm grows to be 32 feet in length. I spoke of it as a worm. In ordinary parlance we generally call a tape-worm a single animal, but scientifically speaking, the tape-worm is a colony of animals. The head, provided with two suckers, by means of which it holds fast to the wall of our intestinal tract, is what we have swallowed, as a germ or larva, with the fish, and represents the mother of the colony; while these segments, of which there may be hundreds, each represent individual worms of a second generation, the mother and all her daughters remaining joined together as a colony. It may be a satisfaction for you to know that this parasite is rare in America.

As our fish-plates are removed and we are waiting for the next course, consisting of meats, we introduce a new topic of conversation by taking a sip of unfiltered and unboiled water. It would have been better, perhaps, had we not taken that particular drink, for we have the risk of swal-

lowing the germs of a number of different parasites.

We might, perhaps, have swallowed the eggs of the ordinary lumbricoid worm (*Ascaris lumbricoides*). This is one of the most common of the parasites found in the human species. I do not know how common it is in Washington, but I have records of examinations of 7,547 persons in certain European cities, and of this number 962 persons, or 12.7 per cent., or about one person in every eight, were infested with this worm, and there is no reason to suspect that the worm is any less frequent in this city. It is especially frequent among the school children, negroes and idiots, in fact among all classes of people who are not cleanly about their personal habits, and who drink unfiltered or unboiled water. In the city of Paris, where the entire water supply is filtered, the worm is exceedingly rare.

If we happened to be in Egypt, or in certain parts of Asia, we might have become infected with another worm, the guinea-worm by name (*Dracunculus medinensis*), which some scientists look upon as the fiery serpent of the children of Israel. This parasite, of which there is probably only one specimen in the United States, is about a yard long and lives under the skin; it produces large swellings, accompanied by an intense burning sensation, hence the name fiery serpent or fiery dragon, which it retains to the present day. The parasite is caught by swallowing small crustaceans in unfiltered drinking water, for the larval stage of this worm lives in these minute crabs, *Cyclops* by name.

Although we are not liable to catch the fiery serpent of the children of Israel in this part of the world, there is a somewhat similar parasite which we do stand in danger of catching. This worm, which scientists call a thread-worm (*Filaria sanguinis hominis*), lives in various parts of the body; the young embryos of the worms are found in the blood and are so small, about 1-1000 of an inch long, that a large number may be found in a single drop of blood. Now, when mosquitoes bite a person infected with these worms, the insects swallow a number of these microscopic germs along with the blood. The worms grow somewhat while in the body of the mosquito, and when Mrs. Mosquito, after spending four or five days digesting her meal, goes to some body of water to deposit

her eggs, the worms are ready for the next step in their life-history. After the mosquito dies and falls into the water, the young worms devour the internal organs of the insect, leave the mosquito and swim around until they are swallowed by the person who is careless enough to drink unfiltered or unboiled water.

In some other parts of the world another curious animal is caught from the water, an animal about half an inch long, which spends its earlier stages in a small crab, but which after being swallowed by man, lives in the large veins in his abdomen and causes a very serious disease.

But we have caught enough of parasites from that drink of water—let us pass on with our lunch. We have before us on the table a number of different kinds of meat. Some of us may prefer tongue, or roast beef; others may prefer pork of some kind, say roast pork, boiled ham, or if we are inclined towards German customs, we may take some duck stuffed with sausage. Let each one select his, or her own meat, and I will tell you what parasite you have swallowed, taking it for granted that all of the meats are underdone.

Those who have chosen beef in any form, as tongue, roast beef, smothered beef, steak, or stuffed veal, etc., have run the risk of catching the so-called beef-measle tape-worm (*Tænia Saginata*). This is the most common of the eight different species found in man. It is generally about fifteen to thirty feet long and is made up of a head and about 1,200 to 1,300 segments, each one of which you will recall represents a separate worm. These small bladder-like structures, about the size of a small bean, resemble bits of fat to a certain extent. These are the objects you swallow when you catch a beef-measle tape-worm. This cyst contains a tape-worm head bearing four suckers. When this is swallowed, segments begin to form very rapidly. In treating for tape-worm, it is always necessary to get rid of this head, for if that remains in the body the tape-worm will grow again.

Those of us who chose pork chops, roast pork, ham, or duck stuffed with pork sausage, have of course escaped the danger of becoming infested with the beef-measle tape-worm, but have run the risk of catching a smaller, but still more dangerous, tape-worm, *i. e.*, the pork-measle tape-worm (*Tænia solium*). The object we

swallow in this case is almost identically the same as the object we would have swallowed had we eaten beef. The bladder-worm (*Cysticercus cellulosus*) lies in the muscle, surrounded by connective tissue, and as it comes into our stomach, the surrounding cyst is digested. The head and neck pass to a point in our digestive tract a little way below our stomach, and then begins the formation of segments, the segments always forming near the head, so that the last segment, that is, the segment furthest from the head, is the oldest, while the segment nearest the head is the youngest.

I said that this tape-worm is more dangerous than the beef tape-worm. Not because it causes us more pain while in the digestive tract, however, but because the microscopic embryos, which are formed in the segments, can under certain conditions bore through the intestinal wall and reach the inside of the eye or some other part of the body, and there develop into a bladder-worm. In this way, man, as well as hogs, may become infested with pork-measles.

But this is not the only parasite we have run the risk of catching in eating half-cooked pork. We may have eaten a piece of meat infested with the much dreaded trichinæ.

These trichinæ are curious little creatures, and although they are objects of considerable fear to the physician, who knows only too well that if these parasites once gain access to a patient's muscles, he is utterly powerless to reach them and kill them with any medicine known, yet to the zoölogist these worms are of considerable interest.

They are very small, as you will believe when I state that as many as 350,000 may live in a single pound of meat. These minute worms live inside of the muscle-fibre of pork, coiled up like a spiral, with a small cyst around them. When we eat this pork, the meat upon coming into our stomach is digested and these minute cysts are liberated. The juices of our stomach then dissolve the cysts and Mr. and Mrs. Trichina pass down below our stomach and proceed to make life unpleasant for us. Mrs. Trichina becomes the mother of about 10,000 to 15,000 wriggling youngsters within a month's time, and these latter bore through our digestive wall and journey to the muscles. Upon arriving at some muscle which they find to let, they bore

into it and proceed to take possession of the contractile substance. The more of the contractile substance the trichinæ eat, the less there is for us to use in swallowing, breathing, walking, etc. After some weeks, however, the parasites have satisfied their appetite, and they become encysted, and our muscles present the same appearance which the pork had before we eat it. If our physician has succeeded in stimulating us up to the stage when the parasites become encysted, we will recover from the disease, and the trichinæ will do no further harm, until we go to Africa as missionaries, when the savages may suddenly discover that they have a bad case of trichinosis, should they not allow us to carry on our work unmolested. I should not, however, advise that we require candidates for the missionary field to first become infected with trichinæ in order to discipline the cannibals, but had our first delegation of missionaries passed through the disease of trichinosis before going to their fields of labor, the savages would by this time have learned that it was dangerous to use missionaries as an article of food.

I stated that we obtained our trichinæ from half-corked pork, but you may wonder how the hogs became infected. The matter is very simple indeed. These parasites are also found in rats, and as the hog is very fond of rats as a *delicatesse*, the hogs catch the parasites by eating rats. Rats catch up the infection among themselves by eating each other, for rats are cannibals.

We have, perhaps, not noticed that the odor of the meat brought our favorite dog into the dining-room. He is practically a member of the family and petted by all, none except the scientist looking upon him as anything except a most faithful friend, old Dog Tray! The scientist, however, is hard-hearted enough not to appreciate this friendship, and believing the proper place for a dog is the cellar, the barn-yard, the dissecting-room, or the dog-pound, he hygienically looks upon the dog as his enemy. Nevertheless, some of you do not share these opinions, and as the dog comes to you, you pet him and allow him to sniffle and lick your hand. But let us look for a moment at the animal parasites which the dog has given to you during that short caress!

Beloved old Dog Tray has in his nose a parasite about two to five inches long, a

so-called tongue-worm (*Linguatula rhinaria*); in sniffing and licking your hand he has deposited there some microscopic eggs, and the next time you take a piece of bread, you will transfer these eggs on the bread to your mouth. The eggs will be swallowed and the germ will bore from your digestive tract into your liver, and there develop into a parasite about one-quarter to one-half an inch long.

Or in caressing the dog, you have unconsciously gotten a flea or a louse upon your hands, perhaps under your fingernails, and later you have swallowed that. It may now be a comforting thought for you to know that inside of that flea or louse, there lives the larval stage of a tape worm (*Dipylidium caninum*) with which you have become infected. But that is not all.

The most dangerous animal parasite which man has, is a so-called hydatid, which is the larval stage of a small tape-worm (*Tænia echinococcus*), found in the dog. From the very nature of the habits of the dog we must not be surprised to find the eggs of this tape-worm upon his coat. Petting him, you get these eggs upon your hands; from your hands to your mouth is a short distance; you swallow the eggs and have become infected with the dreaded *Echinococcus*! The echinococcus develops in your liver, in your lungs, in your brain or elsewhere, and you suddenly discover the fact too late—perhaps it is not you who discovers it after all, but the physician who makes your post-mörtem,—that the dog is your enemy rather than your friend. I am not now referring alone to the miserable collections of animated bones and dog-skins which wander into our city from Virginia and Maryland, but I refer to mamma's darling little poodle as well. In fact, from statistics it appears that this hydatid parasite to which I refer is most frequent among the dirty Icelanders who live in the same huts with their dogs, frequently sharing the same plate, and next in frequency in women who keep pet lap-dogs.

But our salad has come on the table. This salid—let it be any kind you prefer—was grown in a rather damp field; the year was perhaps an unusually damp year; and Bridget or Amanda is particularly lazy today and did not wash the salad as well as she would have done, had she expected that you would inspect the various courses

before they came on the table. Let us see what parasites we swallow this time.

First of all, we swallow a most remarkable animal, known as the common liver-fluke (*Fasciola hepatica*), a parasite which is not particularly frequent in man, but one which is more common in sheep and cattle. A parasite which in 1830 killed more than 2,000,000 sheep in England, causing an estimated loss \$20,000,000; and one which killed 1,000,000 sheep in Buenos Ayres in 1882; a parasite which kills hundreds of cattle and sheep in Texas every year, and has recently swept off nearly all the cattle on some of the Sandwich Islands. This parasite lays about 45,000 eggs, in each of which, under favorable conditions, a small ciliated embryo develops; this embryo swims around in the water until it finds a certain swamp-snail, into which it bores its way. Upon coming to rest (as a sporocyst) it produces a third generation (redia) which is however very unlike the first or second. This produces still another different generation (cercaria) which leaves the snail and encysts itself upon some plant, say, the kind used in our salad. When we swallow this cyst, the animal seeks out our liver and developing into the adult, proceeds to make trouble for us.

Nor is this the only fluke which we might catch in eating salad. A smaller one, the lancet-fluke of Germany (*Distoma*

lanceolatum) or the Japanese liver-fluke (*D. sinense*) may be gotten in this way. The Chinese lung-fluke, which also lives in cats and tigers, and which Dr. Ward has recently found in this country, might make their homes with us, brought to us by improperly prepared food.

But I have introduced enough parasites to you to show you the necessity of preparing food carefully before it is placed upon the table. I hope I have not taken your appetites away for your meals tomorrow by making you disgusted with food, although I cannot say that I should feel very sorry if I had made you disgusted with pet dogs. Remember, that if your food is properly prepared, if your drinking water is boiled or filtered, and if you keep dogs from becoming too intimate friends with you, there is absolutely no danger of your catching any of these parasites that I have mentioned. But if you insist upon allowing your pet poodle the privilege of the dining-room, if you are careless about boiling or filtering your drinking water, and if you allow your careless servants to prepare your food as they wish, you in the meantime feeling it beneath you to enter the kitchen and see how matters are going on, you lay yourselves open to infection not only by these parasites of which I have spoken, but by many others.—*Diet and Hygiene Gaz.*

GENIUS AND DEGENERATION.

It is a strange fact, however, and one not noticed by Lombroso or any other writer, as far as I know, that mechanical geniuses, or those who, for the most part, deal with material fact, do not, as a rule, show any signs of degeneration. I have only to instance Darwin, Galileo, Edison, Watts, Rumsey, Howe and Morse to prove the truth of this assertion. It is only the genius of æstheticism, the genius of emotions, that is generally accompanied by unmistakable signs of degeneration. Swinburne's poems show clearly the mental bias of their author, who is described as being peculiar and eccentric. Many of the men of genius who have assisted in making the history of the world have been the victims of epilepsy. Julius Cæsar, military leader, statesman, politician and author, was an

epileptic. Twice, on the field of battle, he was stricken down by this disorder. On one occasion, while seated at the tribune, he was unable to rise when the senators, consuls and prætors paid him a visit of ceremony and honor. They were offended at his seeming lack of respect, and retired showing signs of anger. Cæsar returned home, stripped off his clothes and offered his throat to be cut by any one. He then explained his conduct to the senate, saying that he was the victim of a malady which, at times, rendered him incapable of standing.

Many men of genius have suffered from pasmodic and choreic movements, notably Lenau, Montesquieu, Buffon, Dr. Johnson, Santeuil, Crebillon, Lombardini, Thomas Campbell, Cariucci, Napoleon

and Socrates. Suicide, essentially a symptom of mental disorder, has hurried many a man of genius out into the unknown. The list begins with such eminent men as Zeno, Cleanthes, Dionysius, Lucan and Stilpo, and contains the names of such immortals as Chatterton, Blount, Haydon, Clive and David. Alcoholism and morphinism, or an uncontrollable desire for alcohol or opium in some form or other, are now recognized as evidences of degeneration. Men of genius, both in the Old World and in the New, have shown this form of degeneration. Among the men and women of genius of the Old World, who abused the use of alcohol and opium, were Coleridge, James Thomson, Carew, Sheridan, Steele, Addison, Hoffman, Charles Lamb, Madame de Staël, Burns, Savage, Alfred de Musset, Kleist, Caracci, Jan Steen, Morland, Turner (the painter), Gerard de Nerval, Hartley Coleridge, Dussek, Handel, Glück, Praga, Rovani and the poet Somerville. This list is by no means complete, as the well-informed reader may see at a glance, yet it serves to show, however, how very often this form of degeneration makes its appearance in men of genius. In men of genius the moral sense is sometimes obtunded, if not altogether absent. Sallust, Seneca and Bacon were suspected felons. Rousseau, Byron, Foscolo and Caresa were grossly immoral, while Casanova, the gifted mathematician, was a common swindler. Murat, Rousseau, Wagner, Clement, Diderot and Praga were sexual perverts. Genius, like insanity, lives in a world of its own, hence we find few, if any, evidences of human affection in men of genius.

Dr. Johnson, who was a sufferer from *folie du doute*, had to touch every post he passed. If he missed one he had to retrace his steps and touch it. Again, if he started out of a door on the wrong foot, he would return and make another attempt, starting out on the foot which he considered the correct one to use. Napoleon counted and added up the rows of windows in every street through which he passed. A celebrated statesman, who is a personal friend of the writer, can never bear to place his feet on a crack in the pavement or floor. When walking, he will carefully step over and beyond all cracks or crevices. This idiosyncrasy annoys him greatly, but the impulse is imperative, and he cannot resist it. Those who have been intimately

associated with men of genius have noticed that they are very frequently amnesic or "absent-minded." Newton once tried to stuff his niece's finger into the bowl of his pipe, and Rovelle would lecture on some subject for hours at a time, and then conclude by saying "But this is one of my arcana which I tell to no one." One of his students would then whisper what he had just said into his ear, and Rovelle would believe that his pupil "had discovered the arcanum by his own sagacity, and would beg him not to divulge what he himself had just told to two hundred persons."

We must not confound genius and talent—the two are widely different. Genius is essentially original and spontaneous, while talent is to some extent acquired. Genius is an abnormality, but one for which the world should be devoutly grateful. Psychos, in the case of genius, is not uniformly developed, one part, being more favored than the others, absorbs and uses more than its share of that element, whatsoever it be, which goes to make up intellectuality, hence the less favored or less acquisitive parts show degeneration. Why genius should exist is one of the unexplained phenomena of nature, but that it is the result of natural causes I have not the slightest doubt.—*Med. Rec.*

Etherization of Incarcerated Hernias.

Since 1891 Gussenbauer has successfully made use of Finklestein's method of treating incarcerated hernia. This consists in dropping ether (one to two tablespoonfuls every quarter of an hour) upon the hernia ring and the tumor, the skin over these places having been previously anointed with vaseline to prevent irritation from the ether. This is employed from one to three hours in connection with elevation of the pelvis and gentle taxis. Among 135 cases treated during this period this treatment was indicated in but 31; in the others, owing to the long duration of the strangulation and the violent symptoms (marked tympanites, impending or developing gangrene), herniotomy was resorted to. Of these 31 cases 25 were treated by the ether method, the remainder by simple pelvic elevation and application of ice. The application of ether was successful in 20 cases (16 inguinal, 1 parumbilical, and 3 crural hernias), while in five cases it was necessary to subsequently perform herniotomy.

SOCIETY REPORTS.

OBSTETRICAL SOCIETY OF CINCINNATI.

Dr. Edwin Ricketts read a paper on
EARLY DIAGNOSIS OF CANCER OF THE
UTERUS.

(See page 285.)

DISCUSSION.

DR. A. W. JOHNSTONE: This is a most important subject, and I know every one of you are sitting here thinking of cases. I was thinking of a case that I saw years ago, before such a thing as extirpation of the uterus was ever thought of; had we known then what we know now the life of that patient would probably have been prolonged, but I doubt whether it would have been saved. I speak of it to illustrate the rapidity of growth. I saw the case in 1884. The patient was large and fleshy, and had no constitutional symptoms of any description, but had a pain about the uterus. I found what I thought was a little fibroid of the uterus. In less than a week I saw her again; she had a little hemorrhage, and sticking in the mouth of the uterus was a little polypus. Microscopical examination showed it to be cancerous. In less than three weeks it had filled the cavity. It was a simple ordinary carcinoma. The thing to do in carcinoma is to remove it as clean as you can. However, it is so insidious that sometimes before it breaks down or there is any smell the case is gone, and you will find it involving the lymphatics and almost in a hopeless condition. If the patient is a little stupid and pays no attention to herself, the slight symptoms may be overlooked and you will not be called until it is too late. That has been my experience, and I suppose always will be the experience of all of us.

Some of you know my ideas about carcinoma. It has been a fad of mine for some time, and my ideas have crystallized down to the view that it is due more to the failure of the trophic nerves than to anything else. You know they are totally different from the adult tissue, and it is a trite saying that carcinoma is simply a return to the fetal state. Years ago I studied this in the lymph glands, and it is really beautiful to see that the transforma-

tion of them is very similar to the process of bone. After studying it all over I have come to the conclusion that it must be some failure of the trophic nerves. I remember about a year ago, while walking home from the Academy with Dr. Conner, after a discussion in which there had been nothing said as to the cause, I suggested this idea to him, and he said: "Yes, and you will see more than that if you study your cases closely. You never saw a case of cancer in your life that was not preceded by some nervous strain. This is frequently the death of a husband or child, or financial reverses." And he quoted Grant's case as an example, where he had climbed to the highest pinnacle in the United States, and his son had wrecked him, and he said: "That is a typical case of cancer, and you will always find them preceded by some terrific nervous strain." So I believe that carcinoma is due—and sarcoma to a certain extent, too—to a failure of the trophic nerves; that this storage-battery is exhausted in old people, so we do not have the central control. The cancer is found in the remnants of the fetal structure; in the ovary it usually occurs in hilum, which is really the remnant of the second set of kidneys, which should have shrunken up and been only scar tissue. However, there is carcinoma is likely to appear. In the uterus, it is in the cervix, just after the uterus passes out of its usefulness. The same way with the breast, where it is most likely to occur at the menopause.

There is another thing you may urge against the etiology of carcinoma. I remember years ago, as a boy, one thing I read in either the London *Lancet* or *British Medical Journal*, that gave a clue to the development of carcinoma. Some surgeon of the British Army in the foot-hills of the Himalayas, came in contact with the Hindoos. In their clothes they have a foolish habit of carrying a little bit of charcoal, and when cold they just squat down on it so as to bring it against the thighs or chest. In this way scars are produced, and he gave a list of two or three hundred carcinomas comming out of these scars on the thighs and chest,

localities where we never hear of it in other parts of the globe. The scars are kept irritated constantly by the charcoal being carried under the clothes and giving off fumes and irritative gases.

I believe in every part of our body we have a nerve coming from the trophic centre, whether this is the stomach or the cerebro-spinal system, which keeps the tissues of the body regulated. With that cut off, the tissues are apt to do their own sweet will, and the tendency is to go back to the fetal state. I believe we are a great republic, with a great central control, and every nerve in the body has to have a certain control. When this is cut off, the cells go back to the original state. You may say this is all theory and of no practical good, and you cannot convert it into dollars. I believe you can; it is not time yet.

I have one case which I have followed carefully and thoroughly. I do not feel I should as yet make a report of it, but I will tell you what I have seen. There is no mistake about it being a cancer; it came to me with a terrific ulceration, and was so diagnosed by two men in New York City. I opened the abdomen to take it out, but found a big chunk of a cancer involving the right ureter; I closed it up and quit. I then went to work to increase her nerve force if possible, and at the same time cleansed the vagina daily with the peroxide of hydrogen. Whether it was the disinfection or the manifest improvement of the woman's condition, I do not know, but that ulcer healed and skin grew over it. But the nodule continued growing. I have been working on the case over a year, and the gentleman from New York, whom I had previously seen, said he thought she would be under the sod long ago. The cancer has not been arrested, except to the extent that the frightful itching and the boils she had about the labia have all ceased; the growth of the cancer has not been arrested, but the ulceration was arrested.

This is a line along which I have been working for some time, and I hope some day we will have something; I beg of all of you to go to work along that line, restoring the nerve-force of the patients, so that if we get them up we can keep them from coming back. I remember my old professor saying that the day is coming when we will cure cancers with the hypod-

ermic syringe, and I must say there may be something in it.

I can only congratulate the essayist upon the paper of the evening, and it will be my intention to follow his instructions as far as possible, and take them out as soon as possible. Some I have cut out, and now after ten or twelve years they have not returned. The longest case of cancer I know of was in a very young fellow, a medical friend of mine, two years younger than I am. He had yellow fever, and in the delirium bit his tongue. He was an interne in the Charity Hospital of New Orleans. He had Bright's disease afterward, and this sore place he afterward went to doctoring, and a nasty granular tissue sprung up. It was cut out and examined, and he was told it was cancer. He came home, but was still kept down with the Bright's disease. He granular tissue sprung up. It was cut out and examined, and he was told it was cancer. He came home, but was still kept down with the Bright's disease. He dragged on for six months or a year, and this thing sprang up again. I cut out a funnel-shaped piece all around it and sent it to a doctor in New York, and he said there was no doubt but it was cancer. He then weighed about 130 pounds, and now will weigh about 230. Most of the cases I have treated thus have done about that way. I believe if we ever get carcinoma under control it will be principally through the nervous system.

DR. PALMER: I believe every member here is obliged for the elucidation, theory and facts given us by Dr. Johnstone. The theory is very plausible; there is undoubtedly considerable fact in it. What is true in the case of General Grant is probably true in many other cases. The nervous condition has much to do with producing cancer. One of the most potent agents we have to control cancer is arsenic; the Fowler's solution is probably the best remedy we possess for the treatment. It has its influence upon the nervous system, and will control the cancer better than any other remedy we can give. It is also a potent, but not safe, remedy to apply topically.

While the paper was being read by Dr. Ricketts there occurred to my mind a means of diagnosis, mentioned years ago, which I think is of value. I am not disposed to discount anything he has

said as to the value of the special senses, sight, taste, touch and smell, or the use of the microscope, which is probably the best of all. But a gentleman in Germany a good many years ago spoke of the reliability of the dilatation produced by the sponge in the diagnosis between hyperplastic induration and the induration from a cancerous growth. The former will yield eventually and be dilated, whereas the latter will not yield, and will remain while the parts around dilate. However, I believe the microscope is the best means we have to determine cancer, and should be used in every case of doubt.

DR. A. B. ISHAM: I came down to-night to listen to the practical paper which has been read upon the early diagnosis of cancer, and not to offer any remarks; but since you were so kind as to call upon me, I may say that we cannot diagnose cancer upon the discharges, or the smell, or the induration of the cervix, because we may have all these conditions from specific disease of the cervix, and of the body of the uterus. There occur to me now three cases in which there was the most offensive smell it is possible to conceive of, and which in this particular were equal to any cases of cancer I have ever met with, where there was a thickened condition of the cervix from tears due to parturition, where all the varied forms of the discharges met with in cancer were present, and where there was no positive evidence of specific trouble, but simply a suspicion. They were all cured by specific medication.

I think Dr. Johnstone's remarks, in reference to cancer being due to a disturbance of the trophic nerves, are directly to the point, for carcinoma is nothing more than cell proliferation, and where there is an affection of the trophic nerves cell nutrition may run riot. Perhaps we may sometimes find a remedy to control nerve action among the glandular extracts.

In conclusion, I wish to make an inquiry suggested by the paper, and that is whether there is a specific cancer cell, a cell that microscopically admits of no doubt of its being carcinomatous in its nature.

DR. RUFUS B. HALL: I did not expect to speak on this subject. If the theory of our friend Dr. Johnstone is true, how do we account for the large number of cases coming under observation with

cancer in various parts of the body, in which the patient has no indication of any marked nervous derangement in any way? I am not questioning the truth of the theory, but ask this for information. I am not giving special study to this subject, as he is, but while listening to his interesting remarks I can recall many cases of cancer of the uterus and cancer of the breast in which the patient was otherwise in apparent health. And then, again he recited the fact that this followed so frequently after nervous strain or some great mental stress or misfortune. I think the large majority of cases of cancer coming under my observation have occurred in patients without unusual mental strain, anxiety or worry. I do not believe the majority of cases are found in patients who have passed through such anxiety or strain as would make that a factor in the production of disease. I congratulate Dr. Johnstone upon his theory, and hope he will work out a problem that will be of value to us all, but the fact that we occasionally see cancer in these patient I do not think is sufficient to enable us to make that a factor in the diagnosis of cancer. We occasionally do see cancer in these patients. Where the disease is far advanced, we see the patients suffering with nervous manifestations, but do we see it early in the disease so marked as to make it a factor in the production of the disease itself? I don't want to say this in the spirit of criticism, but as a matter of fact coming under my observation, and I would like to ask Dr. Johnstone if he has any explanation why this is so.

DR. JOHNSTONE: The reason is Dr. Hall has not studied his case close enough. What I mean is mental anxiety and worry, and not brain trouble or any manifestation of hysterics, but something that is giving the mind all it can possibly stand. When Dr. Conner first sprung this idea upon me I was like Dr. Hall, and did not think there was much in it. Since then, however, I have not let one of these cases go away from me without a careful questioning, and every one of them have a skeleton. This is true in nearly all of these cases. Now, I did not expect to speak of this, but expected to write a paper on it. While this may not be the correct line, it may lead us on to find something of practical value. Since Dr. Con-

ner called my attention to the universal worry of these people, and he spoke of it as a general surgeon, I have made a practice of winning the confidence of these patients, and in every case I have found a skeleton in the closet worrying the soul out of them.

But there is another thing and that is heredity. How many of these people may inherit this tendency? It was the old idea that cancer was as hereditary as consumption. The heredity of consumption now is found to be only a weakening, by which we cannot fight the bacilli. Some people may stand worry better than others, and others may be comparatively weak. But then on top of it all we may find something else. At one time we thought there was only one Bright's disease; we may yet find that there are a dozen different kinds of cancer. The nerve idea certainly deserves close study. Certainly those fellows in the Himalaya Mountains cannot have much worry, but in those cases there is enough constant irritation to produce it. But you think of an old psoriasis, which goes on year after year, and you would think if anything would kill out the nerve centre it would be that. These cases develop *de novo* almost.

The doctor was asking the present condition of cancer, and what we know about it microscopically. In 1888 I published a paper on the growth of the cancer in the lymphatic cells, which bears directly upon this question. The round cells simply melt together, just as they melt in the formation of bone. You know Miller's idea—but it is too long to give you—regarding the calcification and decalcification, and the laying down of the Haversian system, etc. The round cells, I think, spring from the connective tissues, and wander around and in turn run into the Haversian system. Until then you do not have the complete formation of the cancer nest. The round cells have frequently gone on ahead. They are the robbers that set up the rebellion; they have gotten out in the connective tissue spaces, and there you find it beginning. It is not the cancer but it is this round cell we must get rid of. The key is to get ahead of that round celled invasion, for that is what makes the cancer grow. The nest is as the ashes after the fire has passed.

DR. HALL: I want to discuss the discussion and not the paper. I still disagree with Dr. Johnstone. For every case of that kind coming under my observation, in which there was a well-marked predisposing cause, at least a half-dozen cases have been under my observation in which there was no such cause. I do not agree with the doctor, but do not oppose the theory.

I want to emphasize one point in Dr. Rickett's paper, and that is the fact that these cases are referred to the operator so often for operation or diagnosis when the patient is beyond any operation—that is, the disease has passed so far that any operation is out of the question. In my paper before the American Association of Obstetricians and Gynecologists last year upon this subject I referred to that point. For each operable case sent in by physicians there are about ten who are past any operation. That has been about the ratio ever since that paper was written. Nearly all the cases have been under observation for months, but the physician in charge, not feeling certain as to the nature of the case, is afraid of making a blunder. Now, that ought to be righted in some way, and ought to be righted by the members of this society. Let the family physicians know that we are not going to criticise them if they refer to us a suspected case of cancer. They are afraid they will be criticised, and it will affect their reputation. Although I am of course, free to say no man would do that, yet it is done.

DR. CHAS. BONIFIELD: I remember reading in the London *Lancet* or the *British Medical Journal*, a lecture in which this was spoken of, but a fatal objection to it in my mind is that it is not particularly in nervous people we see cancers. If that were the cause, it seems to me it would be in these slight, nervous women that we would most often find it, but we more frequently find it in the fleshy, phlegmatic people. If you come to put down care, and trouble as the cause for the disease you can find it for almost every disease we have to treat. It has been very frequently brought forward as a cause for Bright's disease, and has always seemed to me more truly a cause for that than for cancer. There are very few people but have a skeleton in the closet, and if we question them close enough we will find either a little one or a big one.

Dr. RICKETTS: It seems things go in spurts, even surgery, and at present I have no less than fifteen or twenty cases of cancer under observation, and in the last few days it seems to me every case I have examined has been cancer.

Now, while I hope the time will come when we will have made known to us the true cause of cancer, yet while they are hunting for that cause I propose to be one of the number to advocate the earliest possible diagnosis of cancer of the uterus, on common-sense principles, and urge the earliest possible extirpation of that cancerous nodule. While we have our friends who are ready to theorize, and I will admit they are working on lines that are commendable, yet I have been asked even lately by physicians, "will you tell us how we are to get hold these cases earlier, and when we get hold of them how we are to know they are to be operated upon?" Dr. Johnstone spoke of the women knowing about it. All women cannot be made to diagnose these, and the general practitioners cannot be expected to carry microscopes around in their saddle-bags. As I stated, there are three things given to man that do not cost him much and yet I think they have been overlooked to a great extent; in other words, the cart has been put before the horse, and I feel justified in saying that these cases must be gotten at earlier. In this house to-night there is a patient in whom I propose to extirpate the uterus for prolongation of life and a palliative measure, and for nothing else. The patient is begging for comfort.

In regard to the theory of Dr. Johnstone, I call to mind quite a number of cases of cancer, and while I can recall a number of them who are very nervous subjects, yet I can call up a number of cases in as jolly subjects as I know of, and in which I have been unable to unearth anything to indicate that they had suffered from any depression of any kind. I look at it in this way, that we must get at these women in some way; I do not care whether it comes through the microscope or what, but get them so they will promptly consult their physicians when they have this leucorrhœal discharge followed by the watery discharge, which may be productive of a bad odor, and then I believe we will have made a step in the treatment of cancer such as we have never made heretofore.

The Value of Sugar and the Effect of Smoking on Muscular Work.

As the result of a series of experimental researches in the Physiological Institute, Turin, as to the value of sugar and the effect of smoking on muscular work, Vaughan Harley (*Journ. of Phys.*) has come to the following conclusions: (1) The periods of digestion as well as the kinds of food taken have a marked influence on voluntary muscular energy. (2) Irrespective of the influence of food, there is a periodical diurnal rise and fall in the power of performing muscular work. (3) More work can be done after than before midday. (4) The minimum amount of muscular power is in the morning about 9 A. M., the maximum about 3 in the afternoon. (5) Regular muscular exercise not only increases the size and power of the muscles, but has the effect of markedly delaying the approach of fatigue. (6) The amount of work performed on a diet of sugar alone is almost equal to that obtained on a full diet, fatigue, however, setting in sooner. (7) In fasting, large quantities of sugar (500 g.) can increase the power of doing muscular work during 30 voluntary contractions from 26 to 33 per cent., while the total gain in a day's work may be 61 to 76 per cent., the time before fatigue sets in being also lengthened. (8) The effect of sugar is so great that, when added to a small meal, it can increase the muscular power during 30 contractions from 9 to 12 per cent., while the total increase in work may be from 6 to 39 per cent., the approach of fatigue being at the same time retarded. (9) When added to a large mixed meal, sugar can increase the muscular power of 30 contractions of 2 to 7 per cent., the increase in total work being 8 to 16 per cent., and a marked increase in the resistance to fatigue is shown. (10) Two hundred and fifty grammes of sugar taken in addition to a full diet increased the day's work; the work accomplished during 30 voluntary muscular contractions shows a gain of from 6 to 28 per cent., the total day's work giving an increase of power 9 to 36 per cent., and the time before fatigue sets in being lengthened. (11) Moderate smoking, although it may have a slight influence in diminishing the power of doing voluntary muscular work, neither stops the morning rise nor, when done early in the evening, hinders the evening fall.

CURRENT LITERATURE REVIEWED.

IN CHARGE OF ELLISTON J. MORRIS, M. D., AND SAMUEL M. WILSON, M. D.

IN THE BRITISH MEDICAL JOURNAL
of July 28, 1894, are some

Critical Remarks on Sir Andrew Clark's
"Theory and Treatment of Renal Inad-
equacy."

by Sir George Johnston, M. D.

The author here tries to show that the condition declared due to an underaching, but seemingly otherwise normal, kidney, is not due primarily to the kidney. There is here a deficiency of solids in the urine, but it appears due to deficient formation of solid urinary constituents, and not to their formation and retention in the blood. In support of this, the statement is made that the slow, powerful heart beat and tense pulse do not occur, as they do when excreta are retained in the blood. The symptoms are credited to deficient oxidation and imperfect digestion, and the author thinks they are best relieved by a combination of vegetable bitters, with or without pepsin and hydrochloric acid. The lessening of the diet is, of course, very important, but it probably acts by allowing a weak stomach to properly dispose of a small amount of food, rather than by offering to the kidneys an amount of urea, etc., so small that they can excrete it.

Dr. Lloyd G. Smith reports

Five Cases of Hydrocele in the Female.

This affection he says is less uncommon than is generally supposed; is frequently painful, but may be unnoticed until an accident calls the attention to it, and is generally mistaken for hernia. The author thinks the only means of differentiating this from hernia is by making traction and tracing the neck of the sac, which will be found smaller than that of a hernia. This is not possible in all cases, of course, and as there is generally pain connected with the tumor; when seen, the author prefers to operate. He makes a linear incision, ties the neck of the sac, shells it out and sews up the wound, usually getting primary union.

Dr. George F. Hill reports a successful case of

Treatment of Diphtheria by Antitoxin.

The patient was three years old, admitted at 2 P. M. with croupy cough and difficult inspiration. The tonsils were somewhat injected and swollen and with a patch of membrane on the right one. Temperature was 102°, pulse 140, respiration 32. At 4:30 P. M. an injection of eleven minimis of antitoxin (Sherrin's) was given, and at 6 P. M. the temperature was 99.2° with some general improvement. The next day, as the child was becoming restless again, eight minimis were given at 4:30 P. M., and on the following day the temperature was normal, the symptoms abating, and the child playing, talking, and using solid food. The croupiness persisted until the fourth, and the membrane until the seventh day. The diagnosis was confirmed

by cultivations from the membrane. In addition to the injections a thirty minim dose of brandy was given every four hours, a spray of iodine and carbolic acid used twice on the day of admission, and a tent bed with steam used as usual.

Other papers in this issue are "On Death Rates," by Dr. G. H. Fosbroke; "The Personal Factor in Disease," by Dr. Leonard W. Sedgwick; "The Modern Development of the Germ Theory," by Dr. Henry Langley Browne; "The Cycle of Life," by Dr. J. Sidney Turner; "Medical Organization and Remuneration," by Dr. J. McCarthy; "The Spirit of Quackery," by Dr. J. West Walker.

THE AMERICAN JOURNAL OF OBSTETRICS for July contains an article by Dr. William M. Polk on

The Conservative Surgery of the Female Pelvic Organs.

in which he discusses principally the three conservatism of the latest date—myomectomy and ligation of the arteries of the uterus in fibroids; curettage and "tamponade" in all forms of endometritis, whether acute or chronic, puerperal or non-puerperal. In regard to myomectomy he enumerates the indications for the operation as follows, naming the conditions in the order of efficiency:

1. It is applicable to uteri which possess only pedunculated tumors.
2. To uteri whose tumors possess well-developed fibrous capsules, and which are neither so large, so numerous, nor so placed as to require in removal such direct damage to the uterus or to its blood supply as will unfit the organ for proper functional activity.

Of the ligation of the broad ligaments of the uterus to check the growth of fibroid disease he says: "The fact that it aims to accomplish a beneficent purpose without the dangers of a more extended operation, and that it appears to fulfill its purpose as well or better than is done by oophorectomy, commends it to us in cases unfitted for myomectomy on the one hand or incapable of withstanding the radical operation on the other. Our knowledge is insufficient at present to permit us to go beyond this statement."

The author is a firm believer in the efficacy of curettage and gauze packing in all forms of endometritis and metritis, whether acute or chronic. "The most striking results are those obtained in the face of the acute septic inflammations of the organ which occur after abortions or labors; but to be of proper service the measure should be properly applied, delay affording opportunity for systemic infection, after which the treatment, though far from useless or dangerous, is of less service." He urges that at the first sign of an outbreak of sepsis following labor or abortion, the physician should forgo his vaginal douches and other expectant measures and boldly enter the uterus and curette and pack with aseptic

gauze. He contends also that the measure is also of great service in the chronic inflammations and states that "whenever in chronic inflammations the uterus is yet enlarged, is yet in the stage of infiltration, this measure is applicable. This brings within its influence many of the so-called cases of recurrent salpingitis and every case where endometritis, and particularly metritis, persists." As to the resection of ovaries that are the seat of simple or blood cysts, he states that in practice one meets with two classes of simple cysts—in one we have one, two, or at most three, cysts, varying in size from that of the ordinary corpora lutea to a dimension several times as great. In the other class we have many small cysts scattered indiscriminately throughout the cortex of the organ. In dealing with the first class of cases and with hematoma he contents himself with free enucleation, bringing the cut edges together with catgut or silk. In the second class of cases he resorts to ignipuncture of all cysts that can be reached, even laying open the ovary by one free incision to get access to cysts buried in the parenchyma.

The author closes his paper with a word on the subject of tubes whose canal is intact and whose ostium abdominale being open, presumably both are. Presupposing that the ovary or a part of it can be left, his rule has been to free such tubes from imprisonment and leave them, treating the associated endometritis by tamponade. When the tube presents itself with closed or partly closed ostium abdominale, and containing but little muco-purulent secretion, the conditions indicating that the closure is of recent date, he opens such tubes at the ostium, cleanses them, and after stitching back the fimbriated rim, thus giving a free opening, leaves them. When the tubes have seemed fit for preservation the adhesions have not been permitted to contraindicate conservatism.

Dr. W. Gill Wylie contributes a paper on

The Best Method of Operating on Old Lacerations of the Perineum, Especially Those Associated with the Formation of a Rectocele and Displacement of the Uterus.

Regarding the perineum as a movable point of attachment for the transversus perinei, the bulbocavernosus, the sphincter ani, levator ani, and some of the pelvic fasciae, and also as the movable point of attachment for the anus and lower end of the rectum and the lower end of the posterior wall of the vagina, the conclusions are:

1. As a rule, when the perineum is completely severed so that the fecal matter escapes passively, the position of the uterus is not affected.

2. The outer or lower part of the perineum may be torn to a considerable extent and the position of the uterus will not be affected.

3. When the inner or upper part of the perineum is torn or overstretched and relaxed, prolapse of the posterior and anterior vaginal walls will take place, and in time the uterus is retroverted, prolapsed, and may be forced out of the pelvis.

4. The explanation is that when that part of the perineum formed by the fibres of the

levator ani and the pelvic fascia where they encircle and are attached to the lower end of the vagina or anus, is torn apart, the lower end of the vagina and the upper part of the anus are loosened so that they are not held up and elevated when intra abdominal force is exerted, as in straining at stool; both are forced out through the vaginal outlet, and they pull and drag down the uterus, and in time may result in hernia of the pelvic organ.

5. In operating to restore the parts we should aim to reunite the separated edges of the levator ani and the pelvic fascia, and fix them to and in front of the lower end of the rectum and the upper part of the anus, and thus prevent the fecal matter from forcing forward the anterior wall of the rectum and putting on the stretch the posterior wall of the vagina and in this way displacing the uterus downward and throwing the fundus backward between the utero sacral ligaments, etc.

6. This can be done efficiently only by denuding the retracted tissues on either side of the rectocele and uniting them over and in front of the rectocele. As the most important laceration is within the ostium vagina, to reach these tissues the operation must be within the vagina; and to secure good apposition and to avoid dragging down and adding to the tension, most of the sutures should be passed within the vagina from side to side, so as to unite the edges of the pubo-coccygeus muscle and pelvic fascia in front and over the upper end of the anus and the lower end of the rectum, in such a way as to deflect the fecal matter, as it descends to the lower end of the rectum, back through the anus, and thus effectually prevent the formation of the rectocele with its results on the vagina and the uterus.

7. As a rule, when in an old laceration there is a rectocele with retroversion, etc., there will be found an abnormal condition of the anus and lower end of the rectum. There are nearly always hemorrhoids, fissures, or erosions of the anus or rectum, and not infrequently the sphincter ani is abnormally developed, contracted, and irritable, and on this account it is often necessary to remove these conditions to effect a cure of the case. And it is always best to freely dilate the rectum before sewing up the lacerated vagina.

8. Even where there is complete procidentis, with the cervix or whole uterus out of the vaginal opening, this operation can be made to effect a permanent cure in most cases by combining with it amputation of the cervix uteri, and inserting the sutures so as to shorten up the portion of the stump left in the vagina and, as it were, tie up the upper end of the vagina to the upper part of the cervix uteri at the os internum; or, in those cases where there is retroversion, by doing Alexander's operation to shorten the round ligaments, and thus prevent the long axis of the uterus becoming parallel with the axis of the inferior strait of the pelvis and acting as a wedge to be pushed out, by every effort at stool, through the mouth of the vagina and reproducing the procidentis.

Excluding cases of enlargement from in-

tractable and incurable disease or new growths, the author does not believe in removing the uterus on account of extreme prolapse or procidentia, for, with rare exceptions, they can be cured by the above operations.

The paper is illustrated with cuts, showing the author's method of denudation.

Dr. J. M. Baldy, in an article on

Extrication of the Uterus in Disease of the Adnexa,

says that "where the womb itself is greatly enlarged, infiltrated, or diseased, it is a proper subject for removal.

Where there is any good reason for believing that this organ will in future become the seat of disease, it may with propriety be extirpated. Where its removal will facilitate an operation or give greater security against hemorrhage, it is justifiable to extirpate the organ.

Except in the presence of malignant or tubercular disease, the womb should never be disturbed if even a portion of one ovary and a Fallopian tube can be preserved. Nor is an operation to be extended to the performance of hysterectomy, where the double ovariotomy will even temporarily answer the purpose, should the patient be in such condition that the prolonged manipulation might render the result of a given case doubtful."

The author advocates the removal of the uterus in disease of the adnexa on account of the number of cases in which the removal of the diseased appendages has not given the relief sought and in which the subsequent removal of the uterus was necessary. He contends that the uterus without the adnexa is not essential or useful. He prefers the abdominal operation to the vaginal.

This issue contains two papers on Rupture of the Uterus. The first by Dr. Charles M. Green, is entitled:

Rupture of the Uterus; Palliative Versus Surgical Treatment.

The author reports two cases treated by palliative measures, both of which recovered. He also presents tabular statements of cases treated by various methods, surgical and palliative. His conclusions are that for purposes of treatment we may divide cases of uterine rupture into three classes:

1. Complete or incomplete tears of the lateral or posterior walls of the lower segment, with adequate provision for the vaginal drainage, with hemorrhage absent or easily controlled, and with no intestinal hernia; such cases will often do well under simple palliation, with natural vaginal drainage, local antisepsis, general supportive treatment, and measures to promote and maintain firm contraction of the uterus.

2. Complete tears of the lower segment, or even moderate tears of the uterine body, with hemorrhage controllable *per vaginam* with gauze pressure or partial suture, where the child has passed through the rent, and where more or less blood clot and liquor amnii, and perhaps also the placenta, have entered the peritoneal cavity; for this class of cases peritoneal irrigation with weak antisepsics or sterilized salt solution, drainage with iodoform wicking or gauze, combined with gen-

eral palliative measures, would seem most appropriate.

3. Cases in which delivery of the child through the pelvis is impossible or inadmissible; in which there is present hemorrhage uncontrollable *per vaginam*; in which the rents in the uterus are extensive, and of irregular, transverse, or ragged character; for such cases abdominal section is indicated. The propriety of suturing the rents must be decided according to the condition of the uterus and the edges of the tears; when the latter are very ragged and infiltrated with blood, when the uterus is friable and apparently septic, hysterectomy promises better results than suture.

The second paper is by Dr. Malcolm McLean, and is entitled

The Palliative Treatment of Rupture of the Uterus.

The author is of the opinion that instrumental delivery of the child should not be resorted to, but that it should be turned and delivered by the hand alone. He gives as his reason for so advising, that the recession of the head makes the operation with the forceps a very uncertain and dangerous one, the flaccid uterine tissue being easily caught in the instruments and a satisfactory grasp of the head being almost impossible. And when version is resorted to, after an ineffectual and probably disastrous attempt to deliver by the forceps, it becomes a much more grave operation by reason of these previous attempts. If version be performed promptly, and with the hand kept well in contact with the child and not impinging against the uterus, he maintains that it is a safe operation compared with any attempt at delivery with the forceps within the uterus. While the child is quickly yet gently extracted the placenta with its membranes may be readily detached and the whole sac drawn away with its contents which will leave a clear uterine cavity with an uninfected wound of its tissues, which may be left to nature's processes of repair. While the hand is in the uterus it should rapidly, yet with great care, be swept freely along that part of the child which is engaged in, or impacted against, the wound in the uterine wall. The operator should carefully note the following points: (1) the size, location, and other characteristics of the wound itself may be defined; (2) whether there be any escape into the uterus of any intestinal loops; (3) the relation of the child's parts to the wound; (4) whether the placenta be involved in the laceration, and (5) it may be ascertained if the fetal membranes are protruding intact through the wound. If the wound is high up, very irregular and extensive, we can hardly look for repair and should give the patient the benefit of an abdominal operation.

The child may escape through into the peritoneal cavity, and the uterine rent be closed so as to make any attempt at delivery by the vagina improper and impossible.

The author states that in a considerable number of cases of rupture of the uterus a

large hematoma will form, usually beneath the peritoneum, and the extravasated blood will make its way even out to the abdominal parietal tissues, so as to give all the discoloration of extensive ecchymoses on the skin of the side corresponding to the uterine wound. This blood is in due time absorbed and recovery is complete. This subperitoneal collection of blood makes a very serious complication in the operation of laparotomy for uterine rupture. Any attempt to evacuate the effused blood, and to reach and suture the lacerated tissues, is attended with great difficulty and risk to the patient; whereas in those cases where the wound is within the peritoneal cavity, the abdominal section may be the only proper method of treatment.

This author also reports a case of uterine rupture treated by palliative measures where the patient recovered and a year and a half later was delivered of a nine-pound child by podalic version. The cicatrix of the former rupture could be distinctly felt through the thin parieties. The author believes that there is a distinct field for the palliative treatment of rupture of the uterus, as there is also for the operative treatment.

Dr. Edward Reynolds contributes a paper on

The Treatment of Face Presentations,

in which he comes to the following conclusions:

When a face presentation is detected before the engagement of the face, and before rupture of the membranes occurs, there is always reason to hope for a spontaneous restoration of flexion. The obstetrician should therefore confine himself to the adoption of postural treatment and gentle external manipulations till the occurrence of engagement or the rupture of the membranes renders a spontaneous flexion improbable.

When the membranes rupture early an external or bipolar version should be at once performed, in any case in which the condition of the cervix renders a manual dilatation of the os dangerous; but in ordinary conditions of the cervix a manual dilatation should be undertaken immediately after the rupture of the membranes, the head should be flexed by the hand, and the subsequent treatment should be operative, but its details should be dictated by the position.

When the membranes persist until the cervix is completely dilated an anterior position of the chin should be left to nature, so long as its progress is rapid and the fetal heart is steady; but when any irregularity of the fetal pulse, or an even moderate delay at the brim, has been detected, the patient should be anesthetized and the head flexed.

The posterior position of the occiput so produced should not be left to nature, even though the os has been completely dilated by the membranes, but should always, in such cases, be subjected to an immediate manual flexion.

The anterior position of the vertex which results may then be left to nature or may be delivered by forceps.

In neglected cases in which manual flexion is contraindicated, version should be chosen,

if it is practicable, whatever the position of the chin; if version is contraindicated such cases should be treated by the immediate application of forceps to the face as such, but in the posterior positions of the chin this operation should always be preceded by a rotation of the chin to the front. In cases in which the face presentation is due to some other mechanical obstruction the treatment should be determined by the latter factor.

The abdominal methods of delivery are never indicated in uncomplicated face labor.

Dr. F. H. Davenport discusses the

Ultimate Results of Treatment of Backward Displacements of the Uterus by Pessary,

with especial reference to the Alexander-Adams' operation. The author sums up his opinions as follows:

1. In cases of uncomplicated retroversion or retroflexion of the uterus the choice of treatment lies between shortening of the round ligaments and the wearing of a pessary.

2. A cure, either anatomical and symptomatic, or symptomatic alone, may be confidently expected from the use of a pessary in about twenty-five per cent. of all cases.

3. Where a cure is effected it is usually within a year or a year and a half after the beginning of treatment.

4. A large proportion of those not cured can wear a pessary without discomfort and do not wish an operation.

5. The operation for shortening the round ligaments should be limited to those cases where a pessary cannot be worn, to those who prefer it to wearing a support for years, to cases where vaginal treatment is inappropriate, and as supplementary to other operations.

The remaining papers in this issue are: "Symphysiotomy Versus the Induction of Premature Labor," by Charles P. Noble, M. D. "Practical Applications of the Principles of Sterilization," by Hunter Robb, M. D. "Intraligamentous and Retroperitoneal Tumors of the Uterus and its Adnexa," by William H. Wathen, M. D. "The Cystoscope," by Howard A. Kelly, M. D.

[The editor regrets that through an oversight on his part the review of the July number of this magazine should follow that of the August number.—E. J. M.]

Variola and Varicella.

M. Andre Martin relates that two sisters, after travelling from Paris, came to reside in a house where several of the inmates were suffering from varicella. The elder sister at once contracted the affection, whereas the younger, a few days later, showed unmistakable symptoms of variola—namely, confluent pustules, distributed over the whole body, but more marked on the hands and face. Finally, a month later, the father and another sister, who had attended the invalids during their sickness, were seized with varicella. Investigation proved that neither disease existed epidemically in the town at the time, and that its spread was confined to one house and one family.

PERISCOPE.

IN CHARGE OF WM. E. PARKE, A. M., M. D.

MEDICINE.

The Importance of Menstruation in Determining Mental Irresponsibility.

Krafft-Ebing (*Jahrbuch, für Psych.*, x., 2, 3) reaches the following conclusions on the subject:

(1) It is useful to consider the mental soundness of women during menstruation from a medico-legal point of view.

(2) It is advisable where a woman is held on a criminal charge to ascertain whether the commission of the act coincided with the menstrual period; and by "period" is meant not only the days when there is actual flowing, but those before and after as well.

(3) It is best to advise examination of the mental condition when such coincidence is established. This is indispensable when there is a personal history of neuropathic defect, of mental disturbance at the time of previous menstrual periods, or when the nature of the act reveals any striking features.

(4) When then menstrual process exerts a powerful influence on the mental life of the subject the accused should be given the benefit of extenuating circumstances in the infliction of the penalty, even although there be no proof of menstrual insanity.

(5) When the offence of crime has, in a person whose mind is impaired, occurred during the menstrual period, she must be declared irresponsible, for there is every reason to think the act due to emotional impulse.

(6) But individuals who by reason of menstrual insanity would benefit by acquittal on this ground should be considered as dangerous in the extreme and subjected during the times of the menses to close surveillance. It is best to confine them to any asylum for the insane where they will be comfortably cared for and often cured of this menstrual instability of mind.—*Brooklyn Med. Journal*.

Ice in Phlegmasia Alba Dolens.

Dr. John A. Miller (*Pacific Med. Journal*), in treating on the subject of "milk leg," speaks highly of the efficacy of the cold treatment of the disease. He first used it in 1886, and since then has used it in six cases with uniform and decided success. The procedure was in the following manner: An ordinary large towel was dipped into iced water, wrung out and clapped around the affected limb; a heavy flannel roller bandage was then applied from the toes upward to the groin. On the most painful parts, like the inner aspect of the thigh, the popliteal region and the calf of the leg, were laid rubber bags filled with ice. These were kept in place by a circular binder, independent and outside of the roller bandage. The patient was a little shocked when the cold towel was first applied, but the unpleasantness was only momentary, and then the reaction brought ease and comfort. She desired the ice bags

to be renewed quite often at first, as she claimed they relieved the pain, as anything else had never done before: The pain was entirely controlled by the cold. The temperature dropped from 103° to 100° the next day, and the patient commenced to improve, which continued uninterruptedly. The towel was freshly dipped from four to six times in the twenty-four hours. As soon as the patient experienced relief, she was quite anxious to endure the temporary chill from a fresh compress, because the limb always felt better for it afterward. The towels soon became dry and hot, and this gave rise to painful symptoms again.—*St. Louis Med. and Surg. Journal*.

Renal Casts.

Aufrecht (*Centralbl. f. inn. Med.*), discusses the origin of these casts. They must either be due to an exudation from the blood, or be a product of the renal epithelium. In favor of the latter view the following facts are cited: (1) In experiments in which the author tied one ureter, the renal epithelium was seen to contain masses of a hyaline substance which latter subsequently made its way into the lumen of the tubules to form casts (2) Albuminuria may exist without casts. (3) Casts may be present without albuminuria. (4) Casts may be seen in the collecting tubes of a different color, and having such a calibre that would not have allowed them to pass through Henle's loops; the author has shown this undoubtedly local origin in the tubules in the cholera kidney and in scarlatinal nephritis.

Elimination of Phosphate in the Urine in Malarial Fever.

Rem-Picci and Bernasconi (*Il. Polyclinico*), find that there is often in malarial infection an increase in the elimination of phosphoric acid during the first twenty-four hours. This they attribute to the increased ingestion of food which is so commonly desired at the onset of the illness. Almost as soon as the temperature has risen distinctly above the normal there is a very notable diminution in the amount of phosphoric acid eliminated, in spite of the fact that the amount of urine passed is generally much increased. This diminution is independent of the amount of food taken, and occurs even if at the beginning of the access a large dose of phosphate of sodium is taken, or the same drug if given by subcutaneous injection. The diminution is not proportional to the degree or duration of the fever. Immediately after the access of fever ceases there is a remarkable "unloading" of phosphoric acid, which continues for several hours, and generally compensates for the retention observed during the febrile paroxysm. If the access is cut short by quinine, phosphaturia is usually observed. In chronic malarial cachexia the elimination of phosphoric acid did not appear to be affected.

Hysterical Apoplexy.

Bischoff (*Wien. Med. Woch.*) reports a case in a man, aged 28. Some fourteen days after severe mental anxiety, he suddenly became unconscious. On the next morning he regained consciousness, but was found to have complete left hemiplegia and hemianesthesia including the conjunctiva. He was quite aphasic and innervated his face muscles imperfectly and slowly. There was not race of spasm about the face. On the next day it was noted that the movements of the left eye were considerably limited when the right eye was covered up. He soon began to regain power in the leg. The plantar reflex was absent, and the left knee jerk less than the right. About the seventh day the patient again lapsed into a comatose condition lasting for two hours and a half. Clonic spasm was noted on the next day in the platysma and sterno mastoid muscles. He steadily recovered power, but the anesthesia and eye symptoms persisted. A temporary weakness in the left arm again appeared, and the contraction of the field of vision became more marked. The patient ultimately recovered almost completely. The author remarks that the involvement of the face and tongue is rare in these cases, and that Charcot's statement that hysterical affections in the face region regularly appear in the form of spasm is not borne out here. The diagnosis was certain on the third day—the left hemiplegia, the deviation of the tongue to the right, the aphasia with perfect power of writing, the hemi-anesthesia including the mucous membranes, the diminution in the field of vision all pointing to hysteria. The affection of speech in hysteria is mostly mutism; here the patient could phonate, but not articulate. Any anatomico pathological explanation of the eye symptoms was hardly possible. The author maintains that the one-sided lesion was primary, and the unconsciousness secondary, and that it was not an example of hysterical stupor followed by paralysis; nor was it an instance of hysteria complicating organic disease.—*British Medical Journal*.

OBSTETRICS.**The Treatment of Pregnancy Complicated by Heart Disease.**

Sears reports the case of a woman, having a double mitral lesion, between three and four months pregnant, who had suffered for several years with alarming symptoms of failure of compensation. After a month's careful treatment the slightest exertion would upset the cardiac balance. He, therefore, reasoning that for a period of five months she would have increased physiological demands upon her heart and at the end of that time would have to meet the tremendous muscular strain of parturition, decided to induce abortion. This was done by dilating the cervix and packing the cervical canal with iodoform gauze. Two days later the packing was removed and the fetus found in the vagina.

Sears, after reviewing the statistics of

similar cases in which nature was allowed to take its course, summarizes the following propositions:

(1) That many women with valvular disease, even when situated at the mitral orifice, pass through repeated pregnancies without suspecting that they are victims of such disease.

(2) That as miscarriages are very frequent, and the chances of the child's surviving more than a few years are doubtful, if the mother's condition during pregnancy has been serious the probable fate of the latter should take so much more prominence in deciding the question of abortion.

(3) That the necessity of inducing abortion is very probable if grave symptoms have appeared during the early months or are present with an advancing lesion, or if there is a history of extreme danger in the preceding pregnancy.

(4) That if the necessity for an abortion becomes apparent, the sooner it is done the better, while the fetus is still small and the expulsive force chiefly furnished by the uterus.

(5) That the hope that relief may be given when the case has become desperate by inducing abortion is delusive, as it is possible that it only increases the danger.

(6) That marriage should be forbidden, except perhaps in very unusual cases, to women suffering from cardiac disease.—*University Med. Magazine*.

Ten Reasons Why the Abdominal Bandage Should not be Used After Labor.

- 1st. It is unnatural.
- 2d. It is liable to become soiled and hence a harbor for microbes.
- 3d. It increases irritation of the tired and overworked abdominal organs.
- 4th. It interferes with the necessity of frequent antiseptic ablutions.
- 5th. It is difficult to keep in place, unless made to order.
- 6th. It binds down the weak uterus and promotes the return of a displacement or a sub-involution.
- 7th. It predisposes to puerperal and cerebrospinal centers.
- 8th. It increases rather than diminishes the danger of post-partum hemorrhage.
- 9th. It prevents digestion, assimilation, and intestinal peristalsis and tends to bladder trouble.
- 10th. It is unsafe to apply it by any one except the accoucheur or an experienced nurse.—W. B. Conway, in *South Med. Record*.

PATHOLOGY.**The Parasites of Cancer.**

Kurloff (*Centralbl. f. Bakter.*) considers it very desirable that those engaged in investigating the supposed organisms of cancer should furnish with each published case the history of the patient, and a clinical and pathologico-anatomical account of the cancer. Seeing that in all these respects cases differ

greatly from each other, it is very probable that the parasites present also vary in different cases. Only by some such plan can we hope to systematise the results arrived at by various investigators. In the present article especial attention is drawn to the organism (*Rhopaloccephalus canceromatosus*) described by Korotneff Kurloff has found what appears to be the same body in a primary cancer of the dorsum of the hand in a male aged 80 years. The supposed parasite lay in a vacuole within the epithelial cell. The tissue was prepared as follows, small pieces were fixed in Flemming's solution and cut in paraffin. Sections were stained in various ways, those treated by safranin being the most successful. The most notable feature of this parasite is its great size; it is readily seen under a magnification of 300 to 400. It presents well-marked pseudopodia, by which movement, with passage from cell to cell, appears to take place. Kurloff is satisfied of the parasitic nature of this body. Establishing itself within the epithelial cell of the carcinoma, it leads to hypertrophy of this cell, which results in the formation of epithelial "nests."

Occurrence of Living Parasites in the Blood and Cancerous Cells in Cases of Carcinoma.

In patients suffering from carcinoma, Kahane (*Centralbl. f. Bakter.*) finds in blood from the fresh growth, and also from the finger tip, minute, irregular, ameboid, highly-fragile bodies, which he regards as parasites. These show very active rotary and progressive movements. The small bodies lie free in the blood stream, and also within the red corpuscles. The movements are kept up for an appreciable time after penetration of the corpuscle. Kahane thinks that further investigation may show morphological and biological points of resemblance between these bodies and the plasmodia of malaria. Examination in the fresh state disclosed similar bodies within the cells of the cancer. The growths examined were epitheliomata situated upon the face, prepuce, and cervix.

Meningitis Complicating Enteric Fever.

Stuhlen (*Berl. klin. Woch.*) remarks that besides the staphylococcus, streptococcus, and pneumococcus, other micro-organisms may occasionally set up meningitis. He relates the following case in a man whose wife and two children were already seized with enteric fever. After a few days of *malaise* he complained on July 28th of headache, shivering, and constipation. He was admitted three days later. On August 1st there was blood in the stools; stupor, with restlessness and delirium, supervened. On the next day sudden collapse appeared, from which he rallied, but the stupor persisted. On August 4th there was rigidity of the neck, and slight icterus was now observed. He died about the fourteenth day. Besides the lesions in the alimentary canal, there was a purulent cerebro-spinal meningitis. Plate cultures showed colonies having all the characters of

those of the typhoid bacillus, and further investigation confirmed this view. The clinical appearances, the existence of enteric fever in the house, and the presence of the typhoid bacillus (in pure culture) in the meningeal pus made the diagnosis certain.—*British Medical Journal*.

Trophic Disturbance in Wasting Palsy.

Prautols and Etienne (*Rev. de Med.*) relate an exceptional case of osseous and articular trophic changes in a man, aged 48, affected with progressive muscular atrophy. The disease began some thirteen years ago. On admission, there was atrophy of the muscles of hands and arms. The sterno-mastoid, trapezius, pectorales, infraspinatus, serratus magnus, and neck muscles were affected on both sides. The legs were much less involved. The right arm could not be lifted to the vertical position, and he had great difficulty in raising his head. On the right side the head of the humerus was dislocated upwards, and the sensation of rubbing two rough surfaces together could be obtained here. A large, irregular osteophyte grew from the scapula. There was in addition a bilateral carpo radial subluxation. On the left side the outer end of the clavicle was mottled and dislocated, and creaking could be felt in the shoulder-joint. The patellar reflexes were present; there were no ankle clonus, pains, or inco-ordination. The reaction of degeneration was present in the affected muscles. The pupil reaction was normal. There was no evidence of previous rheumatic disease, and the articular affection was certainly comparable to that seen in locomotor ataxia. If all probability it was due to a spinal cord lesion similar to that producing the atrophy, but of hitherto undetermined site.—*British Medical Journal*.

ARMY AND NAVY.

CHANGES IN THE U. S. ARMY FROM AUGUST 17, 1894, TO AUGUST 25, 1894.

Leave of absence for two months, to take effect on or about September 1, 1894, is granted Capt. John L. Phillips, Assistant Surgeon.

Leave of absence for three months, to take effect on or about October 1, 1894, is granted, 1st Lieut. Madison M. Brewer, Assistant Surgeon.

Leave of absence for one month, to take effect on being relieved from duty at Fort Supply, O. T. is granted Capt. William H. Corbusier, Assistant Surgeon.

1st. Lieut. William H. Wilson, Assistant Surgeon, will be relieved from temporary duty in the Department of Dakota by the Com'dg General of that Department when his services are no longer required with troops in the field and will return to his proper station.

Leave of absence for one month with permission to apply for an extension of one month, is granted Capt. Alfred E. Bradley, Assistant Surgeon, U. S. Army.